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ABSTRACT

This study examined the contributions of cognitive quantitative ability, cognitive verbal ability, normed test achievement and grade point average to the ego identity of 202 high school sophomores. The instrumentation used in this study was as follows: (1) Rasmussen Ego Identity Scale: Revised Short Form; (2) The 3-R's Abilities and Achievement Test: Ohio Version, Form A, Level 15/16; and, (3) grade point average of each subject from the immediate past year. The study design was correlational using a multiple regression prediction configuration, the Pearson correlation technique, and a T-test. Data were scrutinized by using the Statistical Package for the Social Sciences. When the linear multiple regression technique was used for males and females separately, little or no variance was accounted for in ego identity. Only congnitive verbal ability was significant for males. When all subjects were considered together, the multiple linear regression analysis revealed that the independent variables used in this study attributed only 6 percent of the variance in ego identity. Cognitive verbal ability was significant at the .01 level; cognitive verbal ability and cognitive quantitative ability merged and all predictor variables combined were significant at the .05 level. (Author/LMO)

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ABSTRACT

EGO IDENTITY, COGNITIVE ABILITY, AND ACADEMIC ACHIEVEMENT: VARIANCES, RELATIONSHIPS, AND GENDER DIFFERENCES AMONG HIGH SCHOOL SOPHOMORES

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ABSTRACT

The purposes of this study were: (1) to measure the amount of variance which the independent variables of cognitive verbal ability, cognitive quantitative ability, normed test achievement, and grade point average contributed to the ego identity of male, female, and all subjects, (2) to examine relationships among these variables for male, female, and all subjects, and (3) to determine gender differences with regard to the variables. The sample was an intact group of 202 high school sophomores enrolled in a single suburban high school in the Cleveland, Ohio metropolitan area. Variables were measured through the use of the following instruments: (1) "Rasmussen Ego Identity Scale: Revised Short Form," (2) "The 3-R's Abilities and Achievement Tests: Ohio Version, Form A, Level 15/16," and (3) grade point average of each subject for the immediate past year. Data obtained were analyzed using the Statistical Package for the Social Sciences. The analysis of multiple regression, Pearson-product moment correlations, and the t-test was used to test the three research questions and 47 null hypotheses.

When the linear multiple regression technique was used for males and females separately, little or no variance was accounted for in ego identity by way of cognitive verbal ability, cognitive quantitative ability, normed test achievement, and grade point average. Only cognitive verbal ability was significant for males. When all subjects were considered together, the multiple linear regression analysis revealed that the independent variables used in this study attributed only 6% of

the variance in ego identity. Cognitive verbal ability alone, cognitive verbal ability and cognitive quantitative ability merged, and all independent variables combined were statistically significant, however, the meaningfulness of these relationships was questionable.

Eighteen Pearson-product moment correlations were significant among the cognitive ability and academic achievement factors. Also, ego identity was significantly correlated with cognitive quantitative ability for males, grade point average for females, and cognitive verbal ability, normed test achievement, and grade point average for all subjects. The correlations involving ego identity were only of modest strength. A t-test indicated that the only variable for which males and females differed significantly was normed test achievement. Females scored somewhat higher on normed test achievement than males.

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PREFACE

The overall purpose of this study was to explore variances, relationships, and gender differences among high school sophomores in terms of ego identity, cognitive ability, and academic achievement. Chapter I deals with the background and a statement of the problem. It also covers the nature and importance of the study, provides definitions of the terms, and discusses assumptions and limitations. A review of related literature pertaining to ego identity, cognitive ability, and academic achievement is presented in Chapter II. The major topics of concern in Chapter III, the Chapter on methodology, are conceptual framework, research design, research questions, testable null hypotheses, research sample, instrumentation, and procedures. The findings of this study are analyzed in Chapter IV and discussed in Chapter V. Included in Chapter V are conclusions and recommendations.

The researcher owes thanks to the following munificent people for making this study possible: Dr. Robert Pitcher for being an inspiring mentor; Dr. Harold Harty for his backing and encouragement; the superintendent of schools, the principal, and the health class teachers in the school district where the study was conducted for their cooperation; K.V. Samuel and Jeanne Wrabel for providing computerized data processing assistance; Sue McKim and Dr. Harold Smith for their assistance with computer searches for source materials; Maryann Gualtieri and Billie Johnston for their effort and attention in the completion of the manuscript; Carol Wrabel for her help with the graphic work; and Trudy Wrabel, his wife, for her patience and support throughout the project. He would also like to thank the 202 high school sophomores who were willing and cooperative enough to participate in this study. They were important to the findings that were an outgrowth of this dissertation.

CHAPTER I

INTRODUCTION

Background of the Problem

Erik Erikson (1950, 1956, 1963, 1968, 1970, 1974, 1975, 1980) has been the most prolific and influential writer on identity for over three decades. He placed identity within the context of ego psychoanalytic theory, viewing it as an epigenetically based psychosocial task distinctive to but not exclusive, to adolescence.

Historically, a concern with the nature and role of identity can be traced as far back as the philosophical dispute of the soul between Leibnitz and Hume (Levita, 1965). Later forerunners of Erikson's (1950) specific concept of "ego identity" included William James' notion of "social self" (James, 1910), Sigmund Freud's use of the term "inner identity" (Freud, 1959), George Herbert Mead and Harry Stack Sullivan's conception of the self as a product of social appraisals (Mead, 1934; Sullivan, 1953), or Paul Schilder's "fluctuating self experience" (Schilder, 1950).

Since Erikson's (1950) formulation, the concept of identity has influenced not only the psychology of adolescence but a broad range of disciplines in the social sciences and humanities as well. According to Bourne (1978a) this influence extended even to ordinary language contributing such common expressions as "finding one's identity" and "identity crisis." Erikson himself stated:

> Indeed, in the social jungle of human existence, there is no feeling of being alive without a sense of ego identity. To understand this would be to understand the troubles of adolescence better, especially the trouble of all those who cannot just be "nice boys and girls", but are desperately seeking for a satisfactory sense of belonging, be it in cliques and gangs here in our country or inspiring mass movements in others.
>
> (Erikson, 1980, p.95)

Ego identity is but one construct within a wide concept of the human life cycle which envisages human growth and development unfolding through phase-specific psychosocial crises or stages (Erikson, 1980). The ego identity construct and its place in this broader conception will be discussed in the next sub-section.

The Ego Identity Construct

Erikson (1980) defined eight stages in the development of the human life cycle. Each successive stage is a potential crisis because of a radical change in perspective. His eight stages of development and their opposite dimensions are: (1) trust versus mistrust, (2) autonomy versus shame and doubt, (3) initiative versus guilt, (4) industry versus inferiority, (5) identity versus role confusion (often referred to as diffusion), (6) intimacy versus isolation, (7) generativity versus stagnation, and (8) integrity versus despair.

This study focused on the ego identity construct which is the fifth stage of Erikson's taxonomy. The psychosocial task of adolescence is basically one of integration. To quote Erik Erikson:

> From a genetic point of view, then, the process of identity formation emerges as an evolving configuration-a configuration which is gradually established by successive ego synthesis and resynthesis throughout childhood; it is a configuration gradually integrating constitutional givens, idiosyncratic libidinal needs, favored capacities, significant identifications, effective defenses, successful sublimations, and consistent roles.
>
> (Erikson, 1956, p. 71)

Marcia (1980) and Waterman (1982), two of the major researchers on the construct of ego identity, indicated that the identity process neither begins nor ends with adolescence. They suggested that it begins with a self-object differentiation at infancy and reaches its final phase with the self-mankind integration at old age. In other words, ego identity is a developmental process across the life span. In the next sub-section the developmental aspects of ego identity will be discussed.

Ego Identity as a Developmental Process

The choice of a developmental pathway for identity formation may be expected to be influenced by a variety of interrelated variables. Much research has been completed on the developmental aspects of ego identity indicating that ego development may take place from childhood through old age. This researcher was able to locate seven extensive reviews on the topic of ego identity (Bourne, 1978a, 1978b; Marcia, 1976b, 1980; Muuss, 1982; Newman & Newman, 1978; Waterman, 1982). The reader is referred to these sources for more information about ego identity development.

A sampling of the many variables which researchers sought to relate to identity formation within various ages over the life span included: anxiety (Highland, 1981), autonomy (Buchsbaum, 1983), interpersonal relations (Gould, 1984), intimacy (Schiedel & Marcia, 1984), locus of control (Rodman, 1983), moral reasoning (Siemering, 1981), self esteem (Prager, 1982), gender (Bilsker, Schiedel, & Marcia, 1984), cognitive ability (Skinner, 1984), and academic achievement (Hummel & Roselli, 1983). The interrelatedness of the latter two variables and ego identity development in adolescence was of specific interest to this researcher and will be discussed in the next sub-section.

Questions Remain about Variable Relationships

As Erikson (1968) hypothesized and as Bourne (1978a, 1978b), Marcia (1976b), and Waterman (1982) supported, ego identity appears to be related to many variables. However, the relatedness of ego identity and two variables, cognitive ability and academic achievement, remain of concern. Educational programs to enhance ego identity among students seem worthwhile. Identity is said to be developmental (Blocher, 1974), and therefore, those lagging behind their peers may be able to benefit from intervention in an educational setting. Aspects regarding the uncertainty of the relationship of ego identity with cognitive ability and academic achievement will be discussed in the next two sub-sections.

Ego Identity and Cognitive Ability. The research evidence regarding the relatedness of ego identity and cognitive ability remains as yet unclear and inconclusive. Cauble (1976) concluded that there was no significant relationship. Wagner (1976) reported only scant evidence. Raphael (1978) obtained supportive results. Bourne (1978a) indicated that it may be said that in some samples and on some cognitive tasks, subjects identified toward the identity end of the continuum appear to perform better. He and Marcia (1980) suggested that much might be learned from a single comprehensive study which would use a substantial sample of males and females and would employ more than one cognitive dimension. This researcher believed the question which thus remained unanswered and which needed to be explored was: Is cognitive ability in at least two different cognitive domains, for example, verbal ability and quantitative ability related to ego identity? Since most of the studies completed thus far relating ego identity to cognitive factors have been with college students, such as Cauble (1976), Rowe and Marcia

(1980), and Wagner (1976), other questions worth pursuing were: (1) Is cognitive ability related to ego identity among high school students, specifically sophomore subjects? (2) What is the strength of the relationship? and (3) Are there any gender differences?

Ego Identity and Academic Achievement. The research results dealing with the relationship between ego identity and academic achievement have also been vague and uncertain. Hummel and Roselli (1983) found that the development of ego identity among a sample of high school girls was related to academic achievement. Shukert's (1980) results indicated that identity development was not significantly related to academic achievement in a high school sample. A question which remained to be further clarified and answered was: Is there a relationship between academic achievement and ego identity among high school students, primarily among high school sophomores? Other questions were: (1) What is the strength of the relationship? and (2) Are there any gender differences? Studies such as Hummel and Roselli (1983) and Shukert's (1980) tended to use grade point average (GPA) as the measure of academic achievement. Using both GPA and the composite score of a normed achievement test would be a different approach to the problem.

Summary of the Background

Erikson (1980) has been the most influential writer on identity in recent times. He has placed identity within the ego psychoanalytic theoretical framework, seeing it as an epigenetically based task distinctive to but not exclusive, to adolescence. Ego identity is only one construct within a wide concept of the human life cycle which envisages human development unfolding through phase-specific psychosocial crises or stages. The process of identity formation is an evolving configuration which is gradually established by successive ego synthesis and resynthesis throughout life.

Ego identity is a developmental process. The choices of a developmental pathway may be expected to be influenced by a variety of interrelated variables. Two such variables are cognitive ability and academic achievement. Based on some of the research (Cauble, 1976; Hummel & Roselli, 1983; Raphael, 1978; Wagner, 1976; Shukert, 1980), questions about the relatedness of ego identity, cognitive ability, and academic achievement remained. A definitive study appeared to be needed to explore these relationships further among male, female, and all high school sophomore subjects.

Statement of the Problem

In the ever-changing contemporary society, the goals of education for high school students are being modified as a result of many diverse influences. One result of the recent interest in individualized instructional objectives and humanistic objectives has been the increasing attention given to student ego identity. Conceptualization of this domain was aided by the writings of Erikson (1950, 1956, 1963, 1968, 1970, 1974, 1975, 1980) and the instruments developed by Rasmussen (1964), Enright, Lapsley, Cullen, and Lallensack (1983) and others (Marcia, 1965; Simmons, 1970). Most research concerning ego identity was conducted to attempt to determine its relatedness to other variables at different stages over the life span. Two such variables (cognitive ability and academic achievement) were of interest here.

The research on the relationship between ego identity and cognitive ability and academic achievement remain tentative (Cauble, 1976; Hummel & Roselli, 1983; Raphael, 1978; Wagner, 1976; Shukert, 1980).

Several questions appeared to need further study. These were: What is the strength of the relationship of or the amount of variance attributed to the criterion variable of ego identity (EI) by the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for male, female, and all sophomore subjects? What are the interrelationships among the variables for male, female, and all sophomore subjects? Are there any gender differences? Attempting to answer these questions was the focus of this study.

Purpose of the Study

The purpose of this study was to investigate the degree to which cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) predict the level of attainment of ego identity (EI) among male, female, and all high school sophomores enrolled in a suburban high school. An examination was also made to determine any significant correlations among the variables of EI, CVA, CQA, NTA, and GPA for male, female, and all subjects. An additional purpose was to delineate gender differences.

General Research Questions

This study attempted to determine the relationship between the criterion or dependent variable of ego identity (EI) and the independent or predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for male, female, and all subjects. Furthermore, the researcher attempted to gather evidence about the relationship among the variables and ascertain any significant gender differences. Based on these premises, the following general research questions were generated for this study:

1. What amount of variance is attributed to ego identity of male, female, and all subjects by way of CVA, CQA, NTA, and GPA?

2. Are there relationships among EI, CVA, CQA, NTA, and GPA for male, female, and all subjects?

3. Are there any differences between males and females with regard to EI, CVA, CQA, NTA, and GPA?

Nature of the Study

The study used the methodology of correlational research. The independent or predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) were used to determine their accountable variance on the dependent or criterion variable of ego identity (EI) among male, female, and all sophomores enrolled in a typical suburban high school in the Cleveland, Ohio metropolitan area. Interrelatedness among the variables and gender differences were reported. The research sample included 202 high school sophomores enrolled in the school who agreed to participate in the study with parent permission.

It was possible to determine the extent to which CVA, CQA, NTA, and GPA affect male, female, and all subjects, to define relationships among the variables, and to ascertain gender differences by statistically analyzing the data received using multiple regression, Pearson correlation, and t-test statistical procedures which are outlined in Chapter III of this study, Methodology, and are somewhat similar to those used by Ashley (1984), Doran and Sellers (1978), Harty and Beall (1984), and Harty, Hamrick, and Samuel (1984).

Definition of Terms

The following were definitions of terms designated specific to this study:

Cognitive quantitative ability (CQA) is the power to reason using rational thinking, especially as it relates to numerical relationships and number series. The operational definition of this term in this study was the measured total raw score on "The 3-R's Quantitative Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982).

Cognitive verbal ability (CVA) is power to reason using rational thinking especially as it relates to word classification and word analogies. The operational definition of the term in this study was the measured total raw score on "The 3-R's Verbal Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982).

Ego identity (EI) is a recapitulation of childhood psychosocial conflicts and an anticipation of adult psychosocial conflicts according to Erikson (1968). The adolescent experiencing an ego identity crisis has "part-conflicts" similar to the following: trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, intimacy versus isolation, generativity versus stagnation, and integrity versus despair (Gallatin, 1975). Ego identity of a sophomore high school student was operationally defined in this study as a self description which was the measured total raw score on the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983).

Grade point average (GPA) refers to the quantity and the quality of a subject's functioning in the academic courses in his or her high school program of studies and is a measure of academic achievement. The operational definition of this term in this study was the total number of quality points (QP) earned by a subject during the immediate past year divided by the total of the credit value for each course (CV) equals grade point average (GPA). The formula for calculating each subject's grade point average was thus $QP \div CV = GPA$.

Identity is a term which was used in this study interchangeably and synonymously with the term, "ego identity," and when used in this study had the same meaning as ego identity.

Normed test achievement (NTA) refers to the quality and quantity of a subject's functioning in the following areas of learning: reading, mathematics, and language (English) and is a measure of academic achievement. The operational definition of this term in this study was the measured composite raw score of the reading, mathematics, and language (English) subtests on "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982).

Subjects were all sophomore high school students enrolled in a typical, suburban high school in the Cleveland, Ohio metropolitan area.

Importance of the Study

The importance of this study was categorized into the following topical areas: (1) study of high school students needed, (2) enlightened counselor and teacher perspectives, (3) altering counseling and teaching styles, (4) curriculum changes, (5) redesign of the organization of the high school, and (6) contributions to the field of research. Each of these will be discussed in the sub-sections which follow.

Study of High School Students Needed

Even though there has been much research on ego identity since Rasmussen (1964) and Marcia (1965) developed reliable and valid instruments to measure the construct, a study of high school sophomores was needed because so many of the studies deal with ego identity on the college level or in the later high school years or attempted to relate it to numerous variables other than those considered in this study, such as anxiety, autonomy, interpersonal relations, intimacy, locus of control, and so forth. A further problem with much of the research was that it dealt with basic or fundamental relationships rather than exploring the prediction of effects. The literature reflected that relationships may exist but did not sufficiently explore influencing factors.

Enlightened Counselor and Teacher Perspectives

This study could provide an enlightened perspective to counselors, teachers, and administrators in recognizing the existence and importance of selected variables and their influence upon ego identity of male, female, and all subjects. Thus, additional research was needed which would deal with the importance of awareness of the variables used in this study, that is, cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA), and their significance in predicting the level of attainment of ego identity (EI). Few known studies were conducted which offered sufficient responses to this problem.

Altering Counseling and Teaching Styles

The findings could contribute useful data for helping counselors to alter their counseling styles and teachers to change their teaching styles. The cry for relevance in the curriculum and the "total educational experience" is a searing issue among youths today. The adolescent often has difficulty in seeing the relationship among burning ego identity concerns (such as developing a sexual identity and developing cognitive skills) and conjugating verbs, studying ancient history, and proving geometry theorems. Counselors and teachers are sometimes remiss in making these relationships obvious. Inservice programs may be planned whereby counselors and teachers will incorporate the findings of this study into their daily activities.

Curriculum Changes

The results of this study may point the way for curriculum changes which will be more closely related to the adolescent's search of ego identity by including more identity relevant topics in the curriculum. This could include drug education and sex education, areas in which considerable misinformation exists even among sophisticated youth. Furthermore, such topics as human development, consumer economics, career opportunities in the future, ecology, sex roles, and sex stereotypes could help adolescents in developing an ego identity.

Redesign of the Organization of the High School

This study should also cause educators to begin to think about the redesign of the organization of the cultural institutions in which identity is formed, particularly in such a context as the high school. If high schools are to be evaluated as settings for psychosocial growth, the school will need to be designed to facilitate such growth.

Contributions to the Field of Research

The study could also add to the increasing body of literature on the importance of the independent variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA), on the ego identity (EI) of high school sophomore students. Furthermore, the study attempted to clarify the relationships among these variables and determine gender differences which at the present time appear uncertain. Finally, the investigation of the variables in this study may be helpful in providing the groundwork for other researchers who may be interested in replicating all or part of this study.

Assumptions of the Study

Assumptions of this study were classified in a two-fold fashion: (1) substantive and (2) operational. Assumptions within each of these classifications are discussed below.

Substantive Assumptions

A major assumption was that Erikson's (1950, 1963) portrayal of the development of ego identity in adolescence is a sound construct within his concept of the psychosocial development of human beings. This has been substantiated in determination and construct validity studies conducted by Marcia (1965, 1966) and in studies by Archer (1980), Donovan (1971), LaVoie (1976), and Meilman (1977, 1979).

A second primary assumption was that the ego identity construct could be fairly reliably measured. This fact is demonstrated in the research work of Constantinople (1969), Dellas and Jernigan (1981), Enright, Lapsley, Cullen, and Lallensack (1983), Marcia (1965, 1966), Marcia and Friedman (1970), Rasmussen (1964), and Simmons (1970).

A third substantive assumption was that ego identity could be concurrently related to other variables such as cognitive ability (Leiper, 1982; Raphael, 1978; Rowe & Marcia, 1980) and academic achievement (Cross & Allen, 1970; Hummel & Roselli, 1983). Ego identity is a robust construct which is measurable and worth exploring in research in relationship to other variables.

Operational Assumptions

The operational assumptions of this study were as follows:

1. The dependent variable of ego identity (EI) can be measured reliably and validly by way of the instrument chosen for this study.

2. Students will possess sufficient reading skills to complete the measure of EI.

3. Subjects will respond to all items on the measure of EI as truthfully as they can.

4. The independent variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) can be measured reliably and validly by way of the instruments used for this study.

5. CVA, CQA, NTA, and GPA are representative variables in predicting the level of attainment of ego identity among high school sophomores.

6. The findings in this study will help confirm the findings of other studies using similar variables such as the one by Hummel and Roselli (1983).

7. The sample selected is appropriate for providing the data which are sought.

Limitations of the Study

This study was designed and undertaken primarily within the following areas of identified limitations: (1) variables involved, (2) sample selection, and (3) instrumentation. Any generalizations made from this study were limited accordingly. Each of the three areas of limitations are categorically presented below.

Variables Involved

The study was limited to the variables of ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA).

Sample Selection

The sample consisted of all the male and female sophomores from a single suburban high school who agreed to participate in the study. Subjects were from a limited geographic distribution. All were residents of one city located in the Greater Cleveland, Ohio metropolitan area.

Instrumentation

Ego identity (EI) was measured by the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983) in this study which is a self-report questionnaire. The results were only accurate to the degree that the self-perceptions reported by the subjects were correct and to the degree that they were willing to express themselves honestly. The reported 0.74 internal consistency score of the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), given the small number of 32 items, seemed satisfactory, though a limitation.

A social desirability bias, discussed by Enright, Lapsley, Cullen, and Lallensack (1983), could have been set into motion, thus affecting the validity of the data through the subjects' awareness of participating in the study (Hawthorne effect) and wanting to make a good impression (halo effect) in terms of ego identity.

Summary and a Look Ahead

In this final section, the reader is provided with a summary of the cogent points in this introduction. Additionally, a look ahead to the organization of the rest of the study is profiled.

Summary

Erikson's (1950, 1963) model of personality delineated that the primary developmental task of an adolescent is the establishment of an "ego identity." The major process by which this is done is one of making, synthesizing, and resynthesizing identity-related decisions until reasonably satisfying and permanent beliefs are held. Ego identity falls into the province of ego psychoanalytic theory and is seen as an epigenetically based psychosocial task distinctive to but not exclusive, to adolescence. It is considered to be a development process over the life span (Enright, Lapsley, Cullen, & Lallensack, 1983).

Ego identity has been shown to be related to many different variables such as anxiety (Highland, 1981), autonomy (Buchsbaum, 1983), interpersonal relations (Gould, 1984), intimacy (Schiedel & Marcia, 1984), locus of control (Rodman, 1983), moral reasoning (Siemering, 1981), self esteem (Prager, 1982), gender (Bilsker, Schiedel, & Marcia, 1984), cognitive ability (Skinner, 1984), and academic achievement (Hummel & Roselli, 1983). The interrelatedness of ego identity and the latter two variables remains in question as varying results have been found by Cauble (1976), Rowe and Marcia (1980), Hummel and Roselli (1983), Wagner (1976), and Shukert (1980).

Questions which remained to be further investigated were: (1) What amount of variance is attributed to the dependent or criterion variable of ego identity (EI) of male, female, and all subjects by way of the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA)? (2) Are there any relationships among EI, CVA, CQA, NTA, and GPA for male, female, and all subjects? and (3) Are there any significant differences between males and females with regard to EI, CVA, CQA, NTA, and GPA?

The study used the methodology of correlational research somewhat similar to that used by Ashley (1984), Doran and Sellers (1978), Harty and Beall (1984), and Harty, Hamrick, and Samuel (1984). Subjects were all male and female high school sophomores from a single, typical, suburban high school in the Greater Cleveland, Ohio metropolitan area who agreed to participate.

This study was important because it attempted to: (1) predict relationships of selected variables on ego identity among high school youth, (2) enlighten counselors, teachers, and administrators about ego identity, (3) help alter counseling and teaching techniques, (4) assist in making curriculum changes, (5) aid in the redesign of the organization of the high school, and (6) make a further contribution to the field of research. A major assumption of the study was that Erikson's portrayal of ego identity is sound. The study was limited to the variables involved.

Finally, it must be said that ego identity is a robust construct. It was measurable and worth exploring in research in relationship to other variables.

A Look Ahead

In Chapter II the literature which is pertinent to this research project will be reviewed. Literature related to ego identity, cognitive ability, and academic achievement will be incorporated into the review. Chapter III will include the conceptual framework for the study, the research design for the study, research questions and testable null hypotheses, and discussion of the research sample. Also, discussed in the Chapter will be the instrumentation, procedures, data analysis and interpretation, and summary of methodology. Findings will be analyzed in Chapter IV and discussed in Chapter V.

CHAPTER II

REVIEW OF RELATED LITERATURE

Plan for the Review of the Literature

The literature on ego identity was wide ranging. Bourne (1978a) pointed out that approximately 50 empirical studies sought in various ways to operationalize the concept and investigate its personality and behavioral correlates from 1963 to 1978. From 1978 to 1984 this researcher was able to identify another 50 or more studies which sought to make further inquiry into the concept. The more recent studies have tended to focus on the developmental aspects of ego identity over the life span, for example, Deldin (1977), Schilling (1976), and Waterman and Waterman (1975) studied the influence of parenting patterns on ego identity development in early childhood. Archer (1980, 1981, 1982) sought to identify the lower age boundaries of identity development in late childhood and early adolescence. LaVoie (1976), Meilman (1977, 1979), and Pomerantz (1979) tended to focus on middle adolescence. Whitbourne, Jelsma, and Waterman (1982) and Adams and Fitch (1982) explored its development in late adolescence. Holstein (1982), Malin (1982), and Whitbourne and Waterman (1979) examined its exigencies in adulthood. Also, interest in personality and behavioral correlates continues to be an interest to researchers even to the present day on an international basis.

The range of literature was narrowed considerably when limited to adolescence. Then narrowed further yet, there were few studies available on the separate and combined influence of cognitive ability (verbal and quantitative aspects) and academic achievement (normed test achievement and grade point average) as predictors of the level of attainment of ego identity among male, female, and all sophomore subjects.

This Chapter contains related research and literature on the topics of ego identity, cognitive ability (verbal and quantitative), and academic achievement (normed test achievement and grade point average) and their relationship. The manner of measuring these variables will also be discussed. The literature selected for review attempts to support the need for the present study. The review will present, summarize, and synthesize research related to the following three major areas: (1) ego identity, (2) cognitive ability, and (3) academic achievement. In addition, an overall summary of the literature will be provided.

Ego Identity

Nearly all of the studies found in the literature have been designed on the basis of Erikson's (1950) formulation of the construct of ego identity. He described ego identity as an epigenetically based psychosocial task distinctive to, but not exclusive, to adolescence. He viewed it as a process of making, synthesizing, and resynthesizing identity related decisions until reasonably satisfying and permanent beliefs are held. It is the fifth of eight stages of psychosocial development posited in Erikson's theory.

Erikson's Theory

Erikson's theory (1963, 1980) is a total life span concept which looks at individual development from birth to death. He defined the stages of psychosocial development in terms of a series of eight tasks.

Each developmental stage involves the resolution of a crisis. The conclusion of a life period is marked by a balance between the favorable and the unfavorable alternatives between two polarities.

The first developmental task according to Erikson (1950, 1963), is one of achieving "trust" as opposed to "mistrust" in relation to the world of objects, the differentiation of self, and the control of one's impulses. The second task is the achievement of "autonomy" as opposed to "guilt." Psychosocial crises in the next two stages involve "initiative" versus "guilt" and "industry" versus "inferiority." The very important fifth stage in terms of this study is "identity" versus "diffusion," the adolescent dilemma. Putting it in the vernacular, when a person has established an "identity," he or she feels "good" about himself or herself. One might say he or she has found himself or herself. However, the danger of this stage is "diffusion" which can best be described as Biff, one of the characters in Arthur Miller's (1949) Death of a Salesman, puts it, "I just can't take hold, Mom. I can't take hold of some kind of life" (p. 54).

Adult development begins in Erikson's sixth stage. "Intimacy," in terms of the formation of deep interpersonal relations as opposed to "isolation," is the task of early adulthood. The seventh stage in Erikson's schema is the resolution of "generativity" versus "stagnation" which he relates to one's need to be of value to society. "Integrity" versus "despair," the final life stage, is one in which the crisis to be resolved pertains to making meaning of one's life.

Part-Stages of Ego Identity

Erikson has made an important contribution in postulating a developmental sequence that encompassed the life span. An important point to be made regarding ego identity is that even though it is only one of Erikson's eight stages, it is said to encompass or incorporate all the other seven stages. In one of his later works, Erikson (1980) himself noted:

> The emerging ego identity bridges the early childhood stages, where the body and the parent images were given their specific meanings, and the later stages, when a variety of social roles becomes available and increasingly coercive. A lasting ego identity cannot be completed without the promise of lasting fulfillment which from the dominant image of adulthood reaches down into the baby's beginnings and which creates at every step an accruing sense of ego strength.
> (pp. 96-97)

Marcia (1980) and Waterman (1982), two of the major contributors to ego identity research, indicated that the ego identity process neither begins nors ends in adolescence. They suggested that it begins with a self object differentiation in infancy and reaches its final phase with the self-mankind integration of old age. Gallatin (1975) added that the adolescent experiencing an identity crisis has part-conflicts similar to the following: trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, intimacy versus isolation, generativity versus stagnation, and integrity versus despair, which are all of Erikson's other psychosocial stages incorporated into ego identity. The complexity of this construct makes it difficult, but not impossible, to measure as will be demonstrated later in this Chapter.

Ego Identity as a Developmental Process

Bourne (1978a) has posited seven different theoretical perspectives of Erikson's concept of ego identity and suggested that there may be others. The perspectives are: (1) adaptive, (2) structural, (3) dynamic, (4) experiential, (5) psychosocial recipiocity, (6) existential, and (7) developmental. This review of the literature on ego identity was limited to the latter, or developmental perspective. The reader is referred to Bourne's (1978a) journal article for more information about the other six perspectives.

The search for ego identity has been hypothesized to encompass the entire life span by Erikson (1980), Gallatin (1975), Marcia (1980), and Waterman (1982), reaching a high point in adolescence. Major questions to be pursued in this review of the literature thus became: Does the research support this hypothesis? Does ego identity, in fact, manifest itself throughout the life span in childhood, adolescence, and adulthood? And does it reach a high point in adolescence?

Childhood. This researcher was not able to locate any research which directly used young children as research subjects in a study of ego identity. Prior to early adolescence, there appears to be little interest in identity issues. What has been studied, however, are parenting styles and family stability as possible antecedent contributors to identity development.

Do differences in parenting styles reflect differences in pathways of identity formation? Deldin (1977) reported that the most important influence on male identity achievement was the level of perceived sex-role typing in the young person's father. Males in the study with highly masculine, stereotyped fathers had higher identity scores. LaVoie (1976) found that high identity males reported less parental control and more praise from their fathers than did low identity males.

Does family stability possibly influence ego identity development? Oshman and Manosevitz (1976) found that a sample of college males who experienced father absence from an early age had significantly lower full scale scores on the "Rasmussen Ego Identity Scale" (Rasmussen, 1964) than did samples from intact families and in families in which mothers had remarried. On the other hand, St. Clair and Day (1979) reported that in a sample of high school girls, two thirds of the students who were assessed to be identity achieved came from homes disrupted by divorce or the death of one parent.

Differences in parenting styles appear to be reflected in pathways of identity formation based on the data presented. Variables relating to family stability as possible contributors to identity development reveal conflicting results thus far. Consistent with developmental principles, it is anticipated that to the extent early childhood provides an appropriate foundation for coping with identity concerns, the more successfully identity development is likely to proceed. This is a hypothesis which needs further testing.

Adolescence. This portion of the literature review deals with identity development in adolescence in two phases: (1) early and mid adolescence and (2) late adolescence. Given the importance of ego identity development in adolescence, it was felt that this "small scope" approach would be more appropriate than a general approach. Marcia (1980) indicated that there are some periods in individuals' lives that are more crucial than others for change in developmental form. He reported, "Adolescence seems to be one of these. It is a period of transition" (p. 160).

Early and mid adolescence are important periods for ego identity formation. Several studies investigating the extent of the existence of ego identity in early and mid adolescence have been conducted (Archer, 1980, 1981, 1982; LaVoie, 1976; Meilman, 1977, 1979; Pomerantz, 1979). All of these researchers used a cross-sectional approach to using males and females to attempt to document the lower age boundaries of ego identity development and to study its progress over time through later adolescence. Early and mid adolescents were chosen for these studies, as was the case with this study, because many of their experiences could be catalysts, if not direct causes, for initial identity activity. As cognitive capacity and achievement develop, one would expect concurrent development in ego identity.

Archer (1980) used 160 sixth, eighth, tenth, and twelfth grade males and females; LaVoie (1976) examined 120 fifteen to eighteen year old males and females; Meilman (1977) studied 125 twelve through twenty-four year old males; and Pomerantz (1979) investigated 200 males and females in eighth, tenth, and twelfth grade. Archer (1979) and Meilman (1977) carried out Marcia's (1965) semistructured interview technique to assess level of ego identity, LaVoie (1976) used Marcia's (1966) "Ego Identity Scale-Incomplete Sentence Blank," and Pomerantz implemented the Rasmussen (1964) "Ego Identity Scale." Archer (1980) performed analyses of variance to assess grade level and sex differences in the frequency of each of four decision making modes, while LaVoie (1976) utilized a one-way analysis of variance to determine if ego identity becomes more positive with age. A multivariate analysis of variance of the effects of age on commitment and crisis was mentioned by Meilman (1979) and, of special interest to this researcher, Pomerantz (1979) used a multiple regression analysis and stepwise multiple correlations to examine the degree to which self-esteem, identity, and physical self-satisfaction contributed to the prediction of the adolescent's satisfaction with his or her social milieu.

A rather distinctive profile for the development of ego identity in early and mid adolescents has emerged from the data analyses of these studies. Ego identity appears to exist across all age groups; however, it appears to become more prevalent and reaches a higher level with increase in age and grade level (Archer, 1980; Meilman, 1979). The high identity adolescent appears to be a more adaptive and better adjusted individual (LaVoie, 1976). According to Pomerantz (1979), sex differences exist in prediction patterns. On the other hand, Archer (1980) found no differences. These studies had relevance for this researcher's study. Male and female high school sophomores were used as subjects, the Rasmussen (1964) "Ego Identity Scale" was one of the instruments used, and the multiple regression technique was carried out in one of the studies (Pomerantz, 1979). The writer used similar subjects, assessment, and statistical procedures. Questions remained about gender differences.

Much of the research work on identity formation has been done with later adolescents, especially with youths who go to college (Adams & Fitch, 1982; Fannin, 1978; Hodgson, 1978; Orlofsky, 1978; Prager, 1977; Schenkel, 1975; Whitbourne, Jelsma, & Waterman, 1982). It is during the college years that the greatest gains in identity formation appear to occur. The results of these studies confirm that, in general, college senior men and women have a stronger sense of ego identity than do their younger counterparts.

Marcia (1976a) found that once a strong sense of ego identity is attained, it may not persist over the life span. Employing the identity status paradigm, he followed individual subjects for more than three years. In his study 57% of subjects classified as identity achievers during college moved into a lower status after college. His study tended to indicate that an individual's identity status at one time does not readily predict his or her status several years later. Marcia (1976b) suggested that ego identity development may require continuous alteration and reconsolidation. It may be important to think of ego identity as an ongoing process.

Adulthood. Does ego identity continue to develop during adulthood? So far only limited research has been conducted concerning identity among adults. Three studies, one focusing on early adulthood (Whitbourne & Waterman, 1979), a second investigating middle adulthood (Malin, 1982), and, a third (Holstein, 1982) centered on late adulthood, have addressed this question.

Whitbourne and Waterman (1979), using the "Inventory of Psychosocial Development" (Constantinople, 1969), conducted a follow-up with male and female college alumni 10 years after they had completed the instrument as undergraduates. The results of the longitudinal and cross-sectional analyses were consistent with the existence of age-related changes. An interaction effect obtained in the time lag analysis suggested that the increase in psychosocial maturity among males involved a process of ontogenetic development whereas that for females may have been a function of historical trend.

The relationship between ego identity status and establishment of a second adult life structure was examined by Malin (1982) using 30 middle aged men and 30 middle aged women. It was hypothesized that the higher the identity status achieved, the better the probable transition into middle adulthood. Statistical results for all hypotheses were non-significant. Trends in the order of the means, however, lent some support to the hypothesis that identity achieved subjects tended to advance within a stable second adult life structure.

Holstein (1982) attempted to provide support of identity development during adulthood, particularly prior to retirement. He studied 57 adult subjects who were within three years of retirement and found 80% of the sample achieved a high ego identity. Holstein (1982) concluded that identity development takes place during late adulthood and proceeds toward identity achievement.

Summary of Ego Identity as a Development Process. Ego identity has been posited to encompass the entire life span by Erikson (1980), Gallatin (1975), Marcia (1980), and Waterman (1982). Studies done by Deldin (1977), LaVoie (1976), and Oshman and Manosevitz (1976), while studying antecedent conditions of ego identity development, tended to support the idea that identity activity begins early in life. The research of Archer (1980), Meilman (1977), and Pomerantz (1979) indicated that ego identity development exists across early and middle adolescence and arrives at a higher level with an increase in age and grade of subjects. Much of the research work has been done with older adolescents where Orlofsky (1978), Whitbourne, Jelsma, and Waterman (1982), and others found the greatest gains in identity formation tend to occur.

Marcia (1976a), while doing a follow-up study of college graduates, discovered that an individual's identity status at one time in life does not readily predict his or her status several years later. Persons may move from a high level of identity development to a lower level as they encounter new crises and commitments through life. Whitbourne and Waterman (1979), Malin (1982), and Holstein (1982) found considerable identity activity among adults.

Based on the research presented, it would appear that ego identity development does take place throughout the life span during childhood, adolescence, and adulthood and that it reaches a high point in adolescence. Another question which will be explored in the next sub-section is: Is ego identity an international phenomenon or is it indigenous to American culture only?

International Aspects of Ego Identity

A review of the research revealed that there has been considerable interest in ego identity throughout various parts of the world within the past decade. Studies have been done in Ghana (Afrifah, 1980), New Zealand (Chapman & Nicholls, 1976), Nigeria (Jegede, 1976), Denmark (Matteson, 1977), Israel (Tzuriel & Klein, 1977), and the United States (Telles, 1983). The latter used Mexican-American subjects.

Worthy of note is the study done by Tzuriel and Klein (1977). This study in part investigated the relationship of ego identity to cognitive complexity which was a relationship explored in this study. A sample of 378 Israeli high school students from Israeli, Oriental, and Western ethnic backgrounds were administered the "Adolescent Ego Identity Scale" (Wessman & Ricks, 1966) and the "Role Repetory Test" (Kelly, 1955). Instead of the hypothesized linear relationship between ego identity and cognitive complexity, an inverted U-shaped relationship was found using analysis of variance. The significant main effect of cognitive complexity indicated that ego identity was higher among subjects of medium cognitive complexity than among persons of high or low cognitive complexity ($p < 0.01$).

Based on the international interest in ego identity, it appears to be a topic worthy of study. Also, Tzuriel and Klein's (1977) study demonstrated that ego identity can be related to other variables such as cognitive development in other cultures.

Assessment of Ego Identity

While various methodologies have been used in the assessment of ego identity, three basic procedures have received more than passing attention: (1) self descriptive Q-sorts which use adjectives or phrases, (2) semistructured interviews, and (3) self-report questionnaires. Each of these methods of measurement will be discussed below.

Q-Sorts. One of the complications in the search for a valid and reliable measure of ego identity is that it is one of the most complex constructs used to describe the adolescent personality. In view of the construct's complexity, few measures of identity have accurately operationalized it. Gruen (1960), Heilbrun (1964), and Hauser (1976) utilized a Q-sort that defines identity as consistency across sortings. An individual asked to sort the same adjectives or phrases repeatedly may become more consistent simply because he or she remembers previous orderings, and thus can decrease the element of random error with each subsequent ordering. Such role consistency does not seem to tap the complexities of the identity crisis.

Questions were raised by Bourne (1978a) regarding the capacity of the Q-sort to measure the broad construct of ego identity. First, can it be assumed that inconsistency among a person's several sorts always implies he or she is confused? Maybe such inconsistency reflects a degree of flexibility in accommodating oneself to difficult types of role situations or it might conceivably reflect a socially desirable test-taking response. Second, would not an individual asked to sort the same adjectives or phrases repeatedly become more consistent simply because he remembers previous orderings? Third, even if consistency among sortings were a valid measure of role consistency, would role consistency entail a consolidation of identity? Other than Hauser's (1976) use of a Q-sort, little evidence could be found of its use in more recent times. Based on its limited capacity to measure the global construct of ego identity and its apparent lack of use by contemporary researchers, it was not given further consideration for use in this study.

Semistructured Interviews. Marcia (1965) operationalized the construct of ego identity by developing a semistructured interview technique. The interview is divided into three sections, each of which attempts to ascertain the subject's experience of a crisis and his ensuing commitments in regard to personal vocation as well as political and religious ideology. Interviews usually take 30 to 45 minutes and are tape recorded. The interview protocol for each subject is subsequently coded by deciding which of four "identity statuses" best fits him or her (identity achievement, foreclosure, moratorium, or identity diffusion). Interview protocols are usually coded by two or three judges, using Marcia's (1965) manual that provides explicit criteria on crisis, commitment, identity achievement, foreclosure, moratorium, and identity diffusion with respect to occupation, religion, and politics. After rating each area separately, the interview as a whole is assigned an aggregate identity status rating.

The interview technique has been the most widely used approach for measuring ego identity. Approximately 50 studies have utilized it since 1964. A chronological sampling of studies making use of the technique includes Marcia (1966), Cross and Allen (1970), Cauble (1975), Orlofsky (1978), and Hummel and Roselli (1983).

Despite its wide-spread usage, the interview technique has several drawbacks. Marcia (1976a) himself said that it does not capture all that Erikson (1963) had in mind in the ego identity construct. A researcher who uses it will not assess the entire identity domain. The interview must be individually administered in 30 to 45 minute periods of time and would be very time consuming and costly to carry out using a large sample. Finally, the interview technique is susceptible to differences in subjects' verbal articulateness. Individuals who are verbally articulate could be more likely to be classified as identity achievers, while those inarticulate or otherwise vague in expressing themselves might be classified as non-achievers or diffusions. For these reasons, the semistructured interview technique was not considered for use in this study.

Self-Report Questionnaires. Among the pencil and paper measures or self-report questionnaires of the ego identity construct mentioned in the literature were the "Inventory of Psychosocial Development" (Constantinople, 1969), the "Identity Achievement Status Scale" (Simmons, 1970), the "Objective Measure of Ego Identity Status" (Adams, Shea, & Fitch, 1979), the "Ego Identity-Incomplete Sentence Blank" (Marcia, 1966), the "Objective Measure of Ego Identity Status" (Dellas & Jernigan, 1981), the "Ego Identity Scale" (Rasmussen, 1964), and the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983). The latter measure is one of the few scales that attempts to operationalize the complexities of ego identity. According to Erikson (1950, 1963) there are seven conflicts referred to as part-conflicts, delineated by Gallatin (1975), that arise during the adolescent identity crisis. Each part-conflict is similar to but not exactly the same as one nuclear conflict experienced at some point in the life span. Given the complexity of the identity crisis, no measure other than the "Rasmussen Ego Identity Scale: Revised Short Form" came close to capturing this complexity.

According to Enright, Lapsley, Cullen, and Lallensack (1983), the total score on the new 30-item Rasmussen Scale may be interpreted as a composite of five part-conflicts (trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, and identity versus diffusion). Furthermore, they indicated that the short 30-item scale may be useful in educational programs because of reduced social desirability bias. The shortened format also permits group administration in a short period of time and allows for implementation of other measures as well without producing a fatigue effect.

Assessment in an educational setting is only as strong as the measurement tools used. The "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983) offers hope for such assessment. The scale was the measurement device of choice for this present study. The reader is referred to Chapter III of this study for a detailed description of the measure.

Cognitive Ability

At least twelve investigators have explored the relationship of cognitive ability to ego identity (Afrifah, 1980; Cauble, 1975, 1976; Cross & Allen, 1970; Enright, Ganiere, Buss, Lapsley, & Olson, 1983; Hummel & Roselli, 1983; Leadbeater & Dionne, 1981; Leiper, 1982; Raphael, 1978; Rowe & Marcia, 1980; Skinner, 1984; Wagner, 1976; Whitt, 1983). The results were almost evenly divided with Enright, Ganiere, Buss, Lapsley, and Olson (1983), Leadbeater and Dionne (1981), Raphael (1978), Rowe and Marcia (1980), and Skinner (1984) identifying significant relationships between the two variables, while the others reported non-significant findings.

Cauble (1976) and Raphael (1978) provided examples of both ends of the continuum of mixed results. Using a sample of 90 college students, Marcia's (1965) semistructured interview, and Constantinople's (1969) "Inventory of Personality Development" to assess ego identity, three Piagetian tasks (pendulum, rods, and balance) to measure cognitive development, and a stepwise regression analysis to analyze data, Cauble (1976) found no significant relationships between ego identity and cognitive development. She indicated that the failure of the two ego identity measures to relate to one another probably precluded their reliable association to formal thought and discouraged further interpretation.

On the other hand, while utilizing a sample of 86 high school females, Marcia's (1965) interview and Rasmussen's (1964) ego identity scale to measure ego identity, the "Conceptual Level Paragraph Completion Method" (Hunt, 1975) and "Wonderlic Personnel Test" (Wonderlic, 1973) to assess cognitive development, and analysis of variance and discriminant analysis statistical techniques, Raphael (1978) found significant relationships between conceptual level ($F\ [2, 75]\ 4.24, p < .018$) and ego identity. Also, significant relationships were found between ego identity status and the "Wonderlic Personnel (intelligence) Test" scores ($F\ [2, 75]\ 5.87, p < .004$).

A review of the literature reflected that findings have been mixed. Further study appeared to be needed to provide clarity and a more definitive answer regarding the relationship between ego identity and cognitive ability.

Measures of Cognitive Ability

Assessment of cognitive ability procedures generally fall into two categories: (1) individually administered instruments and (2) group administered tests. Each of these techniques will be separately discussed in the next two sub-sections.

Individually Administered Instruments. Listed in The Eighth Mental Measurements Yearbook (Buros, 1978) are 28 instruments which may be individually administered to assess cognitive ability or intelligence. Interestingly enough, none of these were used in any of the studies which were reviewed by this researcher. Perhaps this is so because the individually administered tests are too time consuming and uneconomical to give, some taking up to two hours to administer to one person. Individually administered Piagetian tasks (Inhelder & Piaget, 1958), such as combinational and balance tasks, were used by several researchers (Afrifah, 1980; Cauble, 1975; Leiper, 1982; Rowe & Marcia, 1980), but they employed relatively small samples. Because of time and economic factors, an individually administered instrument was ruled out in the current study.

Group Administered Instruments. Buros (1978) indicated that tests are of two types: (1) tests for assessing the performance of groups and (2) tests for assessing the performance of individuals. He referred to these categories as group tests and individual tests, where the words "group" and "individual" refer to the targets being evaluated. The target in this research project was a group of sophomores, therefore, a group test was utilized. Raphael (1978) successfully used a group administered test, the "Wonderlic Personnel Test" (Wonderlic, 1973), to measure cognitive ability in his study and found a significant relationship with ego identity ($F\ [2, 75]\ 5.87$, $p < .004$).

The instrument of choice in this study to assess cognitive ability was "The 3-R's Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982). It is subdivided into two parts: (1) "The 3-R's Verbal Abilities Test" and (2) "The 3-R's Quantitative Abilities Test." Two of its authors, N. Cole (personal communication, August 14, 1984) and R. Trent (personal communication, August 14, 1984), indicated in separate discussions with this researcher that the instrument was comparable to other abilities tests and should prove to be a satisfactory assessment device when used in a research project. Permission could not be obtained to reprint it in this study, therefore, the two parts will be described and discussed in Chapter III under the topic of instrumentation.

Academic Achievement

Nine studies were located in the literature where researchers have attempted to study the relationship between ego identity and academic achievement (Chang, 1982; Crook, 1982; Cross & Allen, 1970; Gold, 1980; Hummel & Roselli, 1983; Laskin, 1980; Sacks, 1973; Shukert, 1980; Waterman & Waterman, 1972). Of the studies mentioned, three stand out as being the most relevant and significant (Cross & Allen, 1970; Hummel & Roselli, 1983; Shukert, 1980).

Cross and Allen (1970) used 81 college males as subjects, while Hummel and Roselli (1983) and Shukert (1980) utilized 20 and 92 high school female subjects respectively. A study employing both males and females would appear to be needed. In each of the studies Marcia's (1965) semistructured interview technique was employed to operationalize ego identity. An investigation using another approach such as a self-report questionnaire, would seem in order. Each of the researchers operationalized academic achievement by using grade point averages (GPA's). The use of an additional measure of academic achievement such as a normed achievement test would be helpful to view achievement from another perspective.

Statistical methods applied in each of the three studies varied, and mixed results were obtained. Cross and Allen (1970) used an analysis of variance to establish a strong relationship between ego identity and grade point average ($F = 4.58$, $df = 3/77$, $p < .01$). Implementing a chi square technique, Hummel and Roselli (1983) found a significant relationship between high academic achievement and high ego identity ($x^2 = 5.50$, $df = 1$, $p < .02$) and low academic achievement and low ego identity ($x^2 = 6.66$, $df = 1$, $p < .02$). A problem in terms of generalizability with Hummel and Roselli's (1983) study is sample size. Only 20 subjects were used. On the other hand, while using a correlational procedure, Shukert (1980) found no significant relationships between ego identity and GPA. Additional research appeared to be needed to clarify the relationship between ego identity and academic achievement using males and females as subjects, employing an objective measure of ego identity and academic achievement, and utilizing more than one statistical approach. This researcher attempted to undertake such a study.

Measurement of Academic Achievement

Two techniques carried out to measure academic achievement are normed achievement tests and grade point averages. These two methods will be briefly discussed below.

Normed Achievement Tests. Buros (1978) listed 37 different normed achievement test batteries in The Eighth Mental Measurements Yearbook. Despite the plethora of academic achievement tests, few researchers have used them in studies associated with ego identity. Instead, they have utilized grade point averages (GPA's) to assess academic achievement (Chang, 1982; Crook, 1982; Cross & Allen, 1970; Hummel & Roselli, 1983; Laskin, 1980). A normed achievement test used in combination with

GPA in a new study was needed.

An available normed achievement test, "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), was the test of choice to measure academic achievement in this study. N. Cole (personal communication, August 14, 1984), the primary author of the test, indicated that "The 3-R's Achievement Test" was a new but fairly standard measure of academic achievement and suggested that it was appropriate for use in a study. R. Trent (personal communication, August 14, 1984), one of the co-authors of the test, related by way of a long distance phone call that he believes "The 3-R's Achievement Test" can be satisfactorily used as a research instrument and should correlate well with ego identity.

The intent of this researcher was to include a copy of "The 3-R's Achievement Test" as an appendix entry in this study, however, F. Finch (personal communication, August 14, 1984), the Permissions Director of the Riverside Publishing Company, conveyed that the test could not be reproduced in the study because reprinting it would tend to violate the confidentiality and have an adverse affect on maintaining the proper integrity of the test. Instead, Finch suggested that the test be described in general terms. The instrument will, therefore, be described in Chapter III of this study under the topic of instrumentation.

Grade Point Average. Grade point average (GPA) was a frequently used measure of academic achievement in studies where attempts have been made to relate it to ego identity (Cross & Allen, 1970; Gold, 1980; Hummel & Roselli, 1983; Shukert, 1980). A significant relationship was found between high academic achievement and attainment of an ego identity by

Cross and Allen (1970) and Hummel & Roselli (1983), but Shukert (1980), on the other hand, found no such positive relationship.

In this research project GPA was used in combination with "The 3-R's Achievement Test" to measure academic achievement to determine if there are any differences. GPA will be briefly described under the instrumentation section in Chapter III of this study.

Summary of the Review of the Literature

A vast majority of the studies found in the literature have followed Erikson's (1950) formulation of the construct of ego identity. He described ego identity as an epigenetically based psychosocial task distinctive to but not exclusive to adolescence. His theory is a total life span concept which examines individual development from birth to death. A series of studies conducted at various stages across the life span have tended to support Erikson's position (Archer, 1980; Deldin, 1977; Holstein, 1982; LaVoie, 1976; Malin, 1982; Marcia, 1976a; Meilman, 1977; Orlofsky, 1978; Oshman & Manosevitz, 1976; Pomerantz, 1979; Whitbourne, Jelsma, & Waterman, 1982; Whitbourne & Waterman, 1979).

Considerable interest in ego identity development has been shown on the international level. Several studies have demonstrated this presence in the literature (Afrifah, 1980; Chang, 1982; Chapman & Nicholls, 1976; Jegede, 1976; Matteson, 1977; Tzuriel & Klein, 1977; Telles, 1983).

Assessment of ego identity has been accomplished through the use of Q-sorts (Gruen, 1960; Heilbrun, 1964; Hauser, 1976), semistructured interviews (Cauble, 1975; Cross & Allen, 1970; Hummel & Roselli, 1983; Marcia, 1966; Orlofsky, 1978), and self report questionnaires (Adams, Shea, & Fitch, 1979; Constantinople, 1969; Dellas & Jernigan, 1981; Enright, Lapsley, Cullen, & Lallensack, 1983; Marcia, 1966; Rasmussen, 1964;

Simmons, 1970). "The Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), a self report questionnaire, appeared to be one of the few measures that operationalize the complexities of ego identity and was utilized in this study.

A review of the literature indicated that the results have been mixed regarding the relationship between ego identity and cognitive ability. At least twelve investigators have explored this relationship (Afrifah, 1980; Cauble, 1975, 1976; Cross & Allen, 1970; Enright, Ganiere, Buss, Lapsley, & Olson, 1983; Hummel & Roselli, 1983; Leadbeater & Dionne, 1981; Leiper, 1982; Raphael, 1978; Rowe & Marcia, 1980; Skinner, 1984; Wagner, 1976; Whitt, 1983). The results were almost evenly divided with Enright, Ganiere, Buss, Lapsley, and Olson, Leadbeater and Dionne, Raphael, Rowe and Marcia, and Skinner identifying significant relationships between the two variables, while the others reported non-significant findings.

Findings have also been varied regarding the relationship between ego identity and academic achievement. Nine studies were located in the literature where researchers have attempted to study this relationship (Chang, 1982; Crook, 1982; Cross & Allen, 1970; Gold, 1980; Hummel & Roselli, 1983; Laskin, 1980; Sacks, 1973; Shukert, 1980; Waterman & Waterman, 1972). Chang, Crook, Cross and Allen, Hummel and Roselli, Laskin, and Waterman and Waterman found significant relationships between academic achievement and ego identity. The others did not report significant findings.

Individual and group measures can be used to measure cognitive ability and academic achievement (Buros, 1978). An available test battery, "The 3-R's Abilities and Achievement Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982) was the instrument of choice to measure cognitive ability and academic achievement in this project. Grade point average was utilized as an additional measure of academic achievement. Its frequent use as a measure of achievement was evident in the literature (Cross & Allen, 1970; Gold, 1980; Hummel & Roselli, 1983; Shukert, 1980).

A definitive study appears to be needed to clarify the relationship between ego identity, cognitive ability, and academic achievement using males and females as subjects, employing objective measures, and utilizing multiple statistical techniques. This study was intended to be such a study.

CHAPTER III

METHODOLOGY

Overview

The literature in Chapter II was unclear and inconclusive regarding the relationships among ego identity, cognitive ability, and academic achievement. This study was an attempt to investigate the influence of the predictor or independent variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) on the criterion or dependent variable of ego identity (EI) for male, female, and all high school sophomore subjects from a typical, suburban high school in the Greater Cleveland, Ohio metropolitan area. Evidence of interrelatedness among the variables with respect to the subjects named was also sought, as were gender differences.

This Chapter will include eight sections. These will be: (1) conceptual framework for the study, (2) research design for the study, (3) research questions and testable null hypotheses, (4) research sample, (5) instrumentation, (6) procedures, (7) data collection, analysis, and interpretation, and (8) summary of methodology.

Conceptual Framework for the Study

The review of the literature tended to reflect that the results of studies regarding the relationship of ego identity to cognitive ability and academic achievement were tentative (Cauble, 1976; Hummel & Roselli, 1983; Rowe & Marcia, 1980; Wagner, 1976; Shukert, 1980). The researcher studied these relationships among male, female, and all high school students. The relationships which were explored in this research project, using a research sample of the entire sophomore class from a single, typical, suburban high school in the Cleveland, Ohio metropolitan area who agreed to participate, are graphically portrayed by way of a model for this study. This graphic is an attempt to demonstrate the relationships which were explored between ego identity (EI) and the influencing variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA).

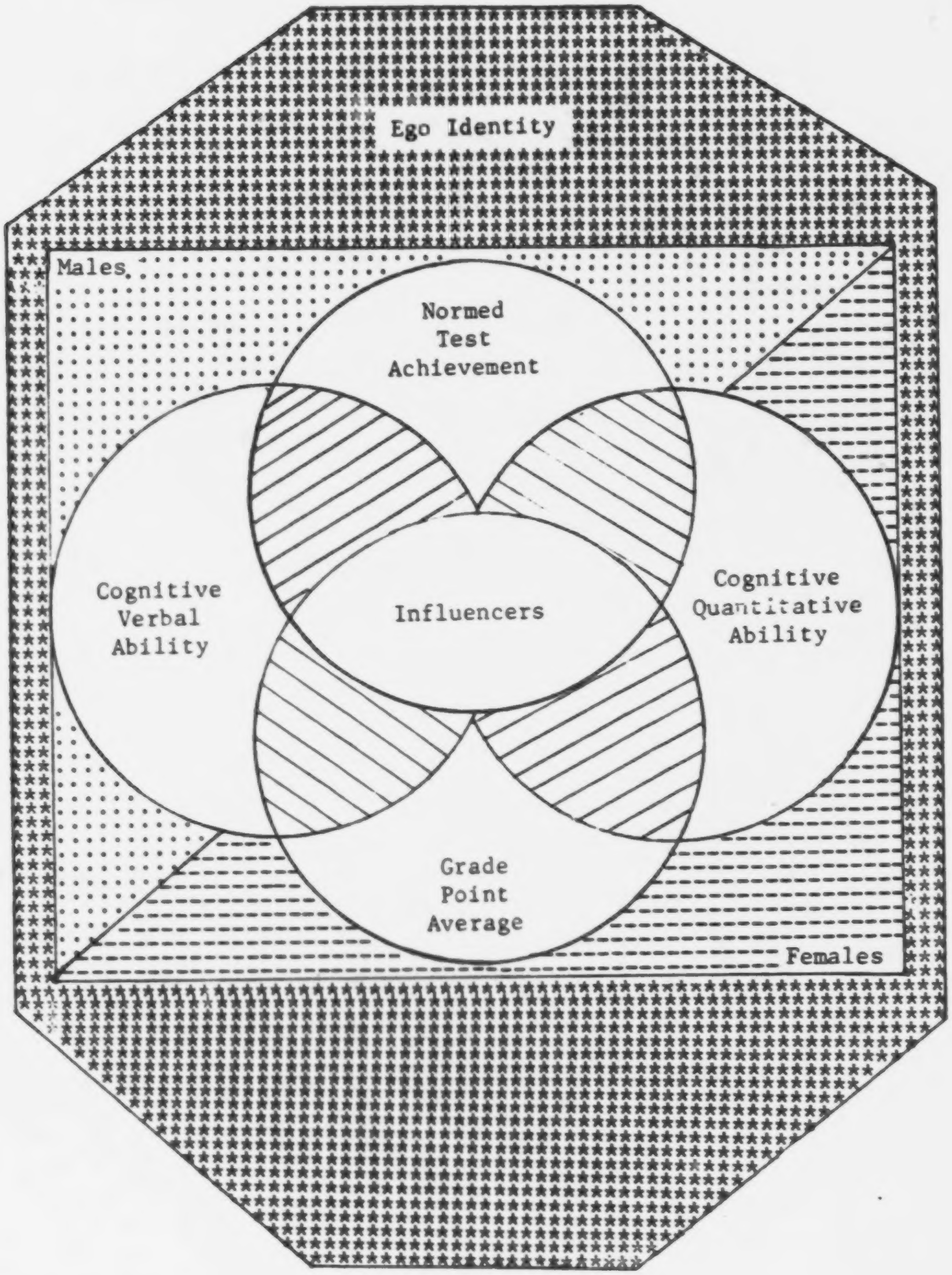
In FIGURE A, the octagon-shaped form in the background represents EI and is so labeled. Erikson (1980) suggested that ego identity consists of eight part-stages. The Venn diagram which appears in the middle of the octagon-shaped form demonstrates the interrelatedness between the influencing variables of CVA, CQA, NTA, and GPA among male, female, and all sophomore subjects. When viewed as a whole, this figure illustrates that this study investigated the relationships between EI and the influencing variables of CVA, CQA, NTA, and GPA among male, female, and all subjects.

Research Design for the Study

The design for this study was correlational using a multiple regression prediction configuration, the Pearson correlation technique, and a t-test. The design included an intact group of all sophomores enrolled in a single, typical, suburban high school in the Cleveland, Ohio metropolitan area who agreed to participate with parent permission.

FIGURE A

CONCEPTUAL FRAMEWORK FOR THE STUDY


Ego Identity
Males
Normed Test Achievement
Cognitive Verbal Ability
Influencers
Cognitive Quantitative Ability
Grade Point Average
Females

The dependent or criterion variable was ego identity (EI). The independent or predictor variables were cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA).

The dependent variable of EI was measured with the "Rasmussen Ego Identity Scale: Revised Short Form," a self-report questionnaire originally developed by Rasmussen (1964) and revised and shortend by Enright, Lapsley, Cullen, and Lallensack (1983). The independent variables were measured as follows: (1) CVA, using "The 3-R's Verbal Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (2) CQA, using "The 3-R's Quantitative Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (3) NTA, using the composite score of "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16" which is composed of three subtests, that is, reading, language, and mathematics achievement (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), and (4) GPA, using the GPA of each subject from the immediate past year. The design of the study is illustrated in FIGURES B and C.

Research Questions and Testable Null Hypotheses

This study was designed to investigate the following research questions (RQ) and test the following null hypotheses (H):

RQ_I: What amount of variance is attributed to ego identity (EI) of male, female, and all subjects by way of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA)?

H_1: There is no significant variance attributed to EI with respect to CVA for males.

FIGURE B

RESEARCH DESIGN FOR THE STUDY FOR VARIABLE RELATIONSHIPS

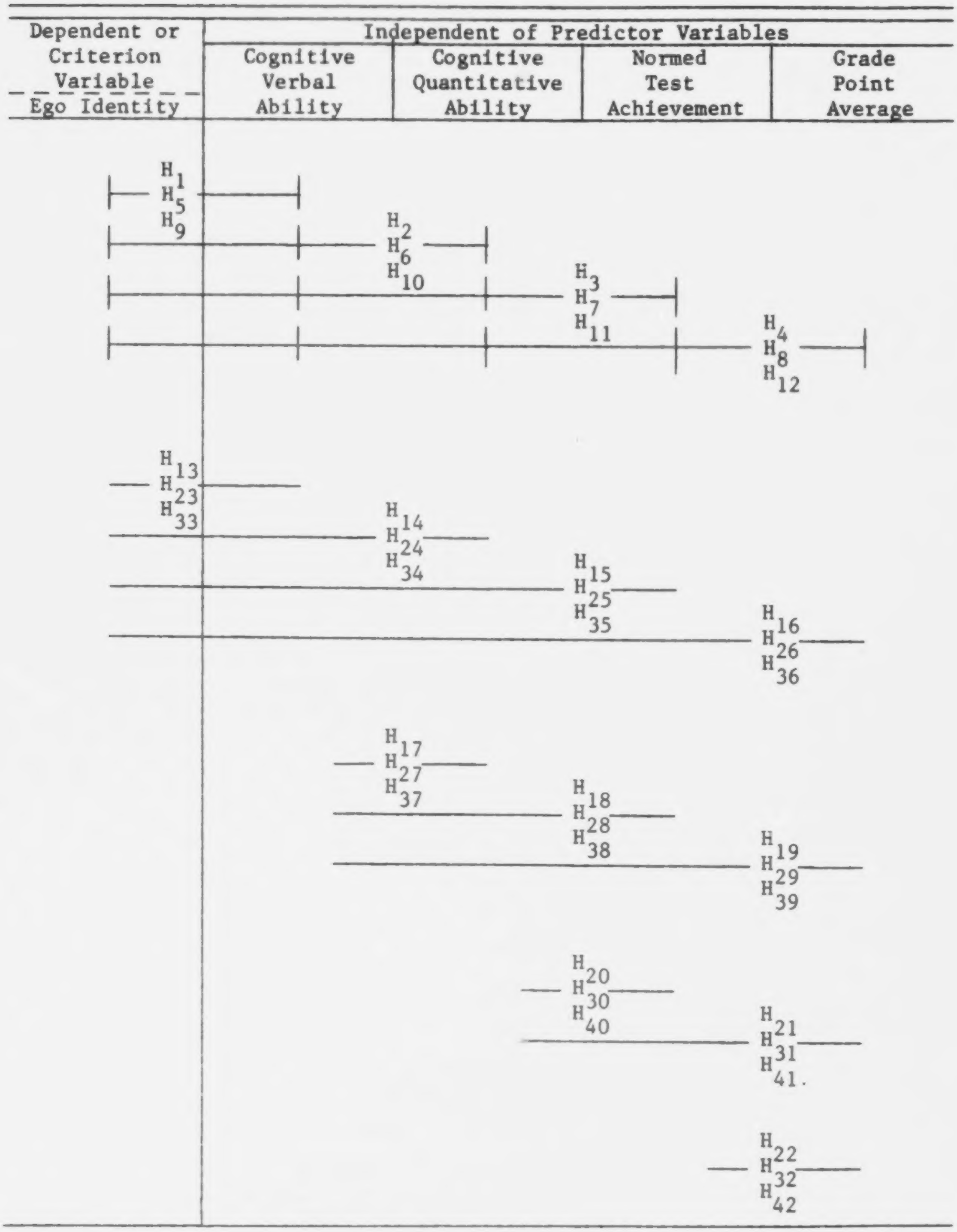

Dependent or Criterion Variable
Ego Identity
Independent of Predictor Variables
Cognitive Verbal Ability
Cognitive Quantitative Ability
Normed Test Achievement
Grade Point Average
H_1 H_5 H_9
H_2 H_6 H_{10}
H_3 H_7 H_{11}
H_4 H_8 H_{12}
H_{13} H_{23} H_{33}
H_{14} H_{24} H_{34}
H_{15} H_{25} H_{35}
H_{16} H_{26} H_{36}
H_{17} H_{27} H_{37}
H_{18} H_{28} H_{38}
H_{19} H_{29} H_{39}
H_{20} H_{30} H_{40}
H_{21} H_{31} H_{41}.
H_{22} H_{32} H_{42}

FIGURE C

RESEARCH DESIGN FOR THE STUDY FOR GENDER DIFFERENCES

Independent Variables	Dependent Variables				
	Ego Identity	Cognitive Verbal Ability	Cognitive Quantitative Ability	Normed Test Achievement	Grade Point Average
Male	H_{43}	H_{44}	H_{45}	H_{46}	H_{47}
Female					

H_2: There is no significant variance attributed to EI with respect to CVA and CQA for males.

H_3: There is no significant variance attributed to EI with respect to CVA, CQA, and NTA for males.

H_4: There is no significant variance attributed to EI with respect to CVA, CQA, NTA, and GPA for males.

H_5: There is no significant variance attributed to EI with respect to CVA for females.

H_6: There is no significant variance attributed to EI with respect to CVA and CQA for females.

H_7: There is no significant variance attributed to EI with respect to CVA, CQA, and NTA for females.

H_8: There is no significant variance attributed to EI with respect to CVA, CQA, NTA, and GPA for females.

H_9: There is no significant variance attributed to EI with respect to CVA for all subjects.

H_{10}: There is no significant variance attributed to EI with respect to CVA and CQA for all subjects.

H_{11}: There is no significant variance attributed to EI with respect to CVA, CQA, and NTA for all subjects.

H_{12}: There is no significant variance attributed to EI with respect to CVA, CQA, NTA, and GPA for all subjects.

RQ_{II}: Are there any relationships among ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for male, female, and all subjects?

H_{13}: There are no significant relationships between EI and CVA for males.

H_{14}: There are no significant relationships between EI and CQA for males.

H_{15}: There are no significant relationships between EI and NTA for males.

H_{16}: There are no significant relationships between EI and GPA for males.

H_{17}: There are no significant relationships between CVA and CQA for males.

H_{18}: There are no significant relationships between CVA and NTA for males.

H_{19}: There are no significant relationships between CVA and GPA for males.

H_{20}: There are no significant relationships between CQA and NTA for males.

H_{21}: There are no significant relationships between CQA and GPA for males.

H_{22}: There are no significant relationships between NTA and GPA for males.

H_{23}: There are no significant relationships between EI and CVA for females.

H_{24}: There are no significant relationships between EI and CQA for females.

H_{25}: There are no significant relationships between EI and NTA for females.

H_{26}: There are no significant relationships between EI and GPA for females.

H_{27}: There are no significant relationships between CVA and CQA for females.

H_{28}: There are no significant relationships between CVA and NTA for females.

H_{29}: There are no significant relationships between CVA and GPA for females.

H_{30}: There are no significant relationships between CQA and NTA for females.

H_{31}: There are no significant relationships between CQA and GPA for females.

H_{32}: There are no significant relationships between NTA and GPA for females.

H_{33}: There are no significant relationships between EI and CVA for all subjects.

H_{34}: There are no significant relationships between EI and CQA for all subjects.

H_{35}: There are no significant relationships between EI and NTA for all subjects.

H_{36}: There are no significant relationships between EI and GPA for all subjects.

H_{37}: There are no significant relationships between CVA and CQA for all subjects.

H_{38}: There are no significant relationships between CVA and NTA for all subjects.

H_{39}: There are no significant relationships between CVA and GPA for all subjects.

H_{40}: There are no significant relationships between CQA and NTA for all subjects.

H_{41}: There are no significant relationships between CQA and GPA for all subjects.

H_{42}: There are no significant relationships between NTA and GPA for all subjects.

RQ_{III}: Are there any significant differences between males and females with regard to ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA)?

H_{43}: There is no significant difference in regard to EI between males and females.

H_{44}: There is no significant difference in regard to CVA between males and females.

H_{45}: There is no significant difference in regard to CQA between males and females.

H_{46}: There is no significant difference in regard to NTA between males and females.

H_{47}: There is no significant difference in regard to GPA between males and females.

Research Sample

The population studied was suburban high school sophomores. The research sample was 202 high school sophomores who agreed to participate in the study and who attend a single, typical, suburban high school which is the only public secondary school in a community of 31,000 citizens located in the metropolitan area of Cleveland, Ohio. The school offers a comprehensive program of studies, including academic, business, and vocational courses, to 1,115 students in grades 9 through 12. Approximately 11,500 families live in the community and the majority of them are lower middle class.

Demographic information regarding age, sex, and race were gathered as part of the self-report questionnaire. The age range of the participants was 14 to 18 years of age. The number of subjects at each age was as follows: age 14 (1), age 15 (154), age 16 (42), age 17 (3), and age 18 (2). The sample was closely distributed across both sexes (99 males and 103 females). The racial makeup was as follows: 19 blacks, 178 whites, and 5 others. Socioeconomic status was determined through use of the school's free and reduced-price lunch list. Within the sample 27 subjects were the recipients of free lunches, while 175 received no free lunch. The 202 subjects in the research sample were members of a class of 240 sophomores in the school. Seven students were absent when the instruments were given, parent permission was denied in three cases, and 28 students did not return permission slips; therefore, they did not participate in the study.

Instrumentation

The instrumentation used in this study was as follows: (1) "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), (2) "The 3-R's Verbal Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (3) "The 3-R's Quantitative Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (4) "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), and (5) grade point average (GPA) of each subject from the immediate past year. Each of these instruments will be separately discussed in the sub-sections which follow.

Rasmussen Ego Identity Scale

The ego identity (EI) of all subjects was measured by the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983). It is normally a 30-item, forced choice instrument in which the person checks "agree" or disagree" to each statement. The statements were chosen to represent, as closely as possible, Erikson's (1950, 1963) theoretical formulations of identity.

Enright, Lapsley, Cullen, and Lallensack (1983), however, suggested that in order to reduce a possible social desirability factor, exaggerated social desirability distractors should be added. Two such distractors were placed into the instrument modifying it for this study to a 32-item measure. D. Lapsley (personal communication, July 12, 1984) suggested that adding these items was a good idea. The items which were inserted as items 6 and 17 respectively were, "I have never told a lie nor do I expect to" and "I answer questions people ask me as truthfully as I can." These items were not scored.

The summary score of the instrument is interpreted as a composite of five of Erikson's (1950, 1963, 1980) part-conflicts (trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, and identity versus diffusion). To avoid response sets, the authors keyed the items to make the "agree" alternative correct on some items and the "disagree" alternative correct on others. D. Lapsley (personal communication, July 26, 1984) intimated that a score of "2" be assigned to ego identity responses and a score of "1" to non-ego identity responses. The total score is the added composite of each item, which is interpreted as the degree of psychosocial health exhibited in the complex identity crisis. The higher the individual's score on the scale is, the greater the level of attainment of ego identity is suggested to be. The scale is easily administered and takes about 20 to 30 minutes. A copy of the modified 32-item instrument can be found in APPENDIX A.

Enright, Lapsley, Cullen, and Lallensack (1983) reported a 0.74 total score internal consistency reliability for a seventh and twelfth grade sample (N = 114). Seventh grade subjects were 31 males and 27 females or a total of 58 seventh grade subjects; in twelfth grade there were 24 males and 32 females or a total of 56 twelfth grade subjects. Using a split-half reliability by way of the Spearman-Brown formula, Rasmussen (1964) reported a 0.85 reliability coefficient on the longer 72 item "Rasmussen Ego Identity Scale." The internal consistency reliabilities on the same instrument using Cronbach's alpha was 0.82 for the total score as reported by Enright, Lapsley, Cullen, and Lallensack (1983). It has been shown to have good validity properties and has been found to relate to educational level, intelligence, and self acceptance, as well as to behavioral adjustment in naval recruits (Rasmussen, 1964). It has also been observed to be negatively related to anxiety and positively related to Constantinople's identity measure (Bach & Verdile, 1975), and to Marcia's "Ego Identity Status Interview" (Rothman, 1978). Also, it has been recognized to have developmental properties (Pomerantz, 1979). An artifact of measurement is that fewer items tend to lower reliability. The 0.74 reliability value on the "Rasmussen Ego Identity Scale: Revised Short Form," given 30 items, then would seem satisfactory, though a limitation.

Enright, Lapsley, Cullen, and Lallensack (1983) examined the 30-item "Ego Identity Scale" with a different sample. Twenty-five high school seniors completed the instrument. Results showed high internal consistency reliability (0.87).

The shortened format of the 32-item "Ego Identity Scale": (1) allowed for the implementation of other measures as well in this study without necessarily producing a fatigue effect, (2) reduced social desirability bias, and (3) allowed for group, short term assessment in an educational setting. Also, D. Lapsley (personal communication, July 12, 1984) asserted that the "Rasmussen Ego Identity Scale: Revised Short Form" is a measure that would be compatible with the objectives of this study.

The 3-R's Verbal Abilities Test

"The 3-R's Verbal Abilities Test: Ohio Version, Form A, Level 15/16" is comprised of two subtests, Verbal Classification and Verbal Analogies. Test 1, the Verbal Classification Subtest, requires students to select a word that is related in some way to a group of other words. First, students search for similarities among a series of words. Then they choose which of five answer choices belongs with the series. In Test 2, the Verbal Analogies Subtest, students select a word that is matched with another word to show analogies between two word sets. First, a pair of words is presented that is related in some way. Then a third word is given that is the first word of the second pair. Students are to figure out how the first pair of words is related. Then they find a word that completes the second pair from five answer choices given. The student's raw score on verbal abilities is determined by adding the raw scores on Tests 1 and 2.

This multiple choice test requires approximately 30 minutes to administer. Reported in The 3-R's Test Technical Manual (Riverside Publishing Company, 1983) were correlations for reliability and validity. To examine the precision of a student's test score on "The 3-R's Verbal Abilities Test," a Kuder-Richardson Formula 20 (KR-20) internal consistency reliability coefficient was computed using 1,800 high school sophomores in the study. The reported reliability was 0.91. "The 3-R's Verbal Abilities Test" is a test of cognitive and scholastic ability; and, as such, its content is related to skills developed, at least partially, in school. Based on a validity study with 609 sophomores in several Ohio school districts, the Riverside Publishing Company (1983) reported a 0.84 correlation between "The 3-R's Verbal Abilities Test" and "The 3-R's Achievement Test."

The publisher indicated that one of the major efforts made in the development of the test was to study the possibility of bias throughout the item development process so that the final test would be as bias-free as possible (Riverside Publishing Company, 1983). A special bias-review panel of noted educators representing different cultural, sexual, and racial groups provided a broad screening of test item content for factors which might disadvantage some population subgroups and made suggestions to attempt to eliminate bias. Members of the panel and their areas of special concerns are listed in The 3-R's Test Technical Manual (Riverside Publishing Company, 1983, p. 9). "The 3-R's Verbal Abilities Test" appeared to be an appropriate measure for assessing cognitive verbal ability in this study.

The 3-R's Quantitative Abilities Test

"The 3-R's Quantitative Abilities Test: Ohio Version, Form A, Level

15/16" is made up of two parts: Quantitative Relations and Number Series. Test 3, the Quantitative Relations Subtest, measures the students' understanding of the concepts of "greater than" or "equal to" in comparing numbers, distances, geometric figures, and common measures. Test 4, the Number Series Subtest, requires students to determine relationships among a series of numbers. The students' raw score on quantitative abilities is determined by adding the raw scores of Tests 3 and 4.

Like "The 3-R's Verbal Abilities Test," "The 3-R's Quantitative Abilities Test" takes an estimated 30 minutes to administer, including actual testing time and directions. The Riverside Publishing Company (1983) reported reliability and validity data. In order to assess the reliability of a sophomore's test score on "The 3-R's Quantitative Abilities Test," a Kuder-Richardson Formula 20 (KR-20) reliability coefficient was calculated with 1,800 high school males and females participating in the research project. The reliability reported was 0.90. As with "The 3-R's Verbal Abilities Test," "The 3-R's Quantitative Abilities Test" is a test of cognitive and scholastic ability, and its content is related partly to competencies developed in a formal educational setting. In the Fall of 1980 a correlation between "The 3-R's Quantitative Abilities Test" and "The 3-R's Achievement Test" using a sample of 609 Ohio sophomore high school students was computed. The Riverside Publishing Company (1983) reported a 0.78 correlation.

Effort was made to eliminate sex, race, and cultural bias in the test. A special review panel analyzed the items which were placed into the test and made suggestions for improvement. "The 3-R's Quantitative Abilities Test" appeared to be an adequate test to measure cognitive quantitative ability in this research project.

The 3-R's Achievement Test

Completing the tripartite of "The 3-R's Tests" which were used in this study was "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16." This test consists of three subjects: (1) reading, (2) language, and (3) mathematics. The content measured in the Reading Subtest includes comprehension, vocabulary, and study skills. On the Language Subtest grammar, capitalization, spelling, and punctuation skills are assessed. The Mathematics Subtest is used to attempt to determine students' competency in computation and problem solving. Students are expected to determine the correct answer from among four choices. A composite score is reported by using the mean raw score of a student on the reading, language, and mathematics subtests.

Estimated administration time is 130 minutes, which is quite lengthy. The Riverside Publishing Company (1983) reported that "The 3-R's Achievement Test" was designed to be a "power" test, not a "speed" test. The long time limit was set so that most students would complete the test. Figures based on a representative sample of every fourth student from the Spring 1980 national standardization, which included 1,800 sophomores, revealed that 99% of the students completed at least 90% of the test (Riverside Publishing Company, 1983). These figures seem to indicate very little speededness for the test.

To establish the reliability of the test a split-half reliability coefficient, corrected by the Spearman-Brown formula, was calculated for the composite test score results to be 0.95 using 1,800 sophomores in the Spring 1980 national standardization (Riverside Publishing Company, 1983). Evidence of the validity of "The 3-R's Achievement Test" can be obtained by examining the relationship of "The 3-R's Achievement Test" scores with scores from two other achievement tests. The correlations of composite scores with the "Stanford Achievement Test" was 0.92 using a sixth grade sample of 43 Vermont students and 0.90 with the "Metropolitan Achievement Test" using 149 Indiana eighth graders (Riverside Publishing Company, 1983). Other correlations reported by the Riverside Publishing Company (1983) between "The 3-R's Achievement Test" were 0.78 with social studies grades (133 Indiana eleventh graders), 0.71 with the "Scholastic Aptitude Test" (40 Indiana eleventh graders), 0.79 with the "American College Test" (13 eleventh graders from an urban southern school district), and 0.84 with "The 3-R's Verbal Abilities Test" (609 Ohio sophomores).

Considering its reliability and validity and owing to the non-bias factor because of the scrutinization of items by a special panel (Riverside Publishing Company, 1983), "The 3-R's Achievement Test" appeared to be a satisfactory selection to measure level of normed test achievement among all sophomore subjects.

Grade Point Average

Letter grades assigned by teachers such as, A (excellent achievement), B (good achievement), C (fair achievement), D (limited achievement), and E (poor achievement) are a commonly accepted method of establishing the achievement level of students. Lavin (1965) indicated that the grade point average (GPA) is the most widely used measure of academic achievement but cautions that it should not be used in research as the sole index of performance. He suggested that it be utilized in conjunction with other measures of achievement. GPA was utilized in this study to measure academic achievement along with a normed achievement test, "The 3-R's Achievement Test."

The National Association of Secondary School Principals provided guidelines for working with grade point averages (National Association of Secondary School Principals, 1972). These guidelines were followed in establishing grade point averages for this research project. In this study each subject's grade point average was calculated utilizing the following criteria:

1. Grades earned by each subject during the immediate past school year were used from the following academic course areas: English, foreign language, mathematics, science, and social studies.

2. Grades earned in "standard" courses, valued at one (1) Carnegie unit of credit, which were taught one hour a day for an entire school year of 180 days were assigned the following quality points: A = 4.0, B = 3.0, C = 2.0, D = 1.0, E = 0.0.

3. Grades earned in "honors" courses, valued at one (1) Carnegie unit of credit, which were taught one hour a day for an entire school year of 180 days were assigned the following quality points: A = 4.5, B = 3.5, C = 2.5, D = 1.0, E = 0.0.

4. Grades earned in "standard" courses, valued at one-half (½ or .5) Carnegie unit of credit, which were taught one hour a day on alternating days or for an entire semester of 90 days were assigned the following quality points: A = 2.0, B = 1.5, C = 1.0, D = 0.5, E = 0.0.

5. Grades earned in "honors" courses, valued at one-half (½ or .5) Carnegie unit of credit, which were taught one hour a day on alternating days or for an entire semester of 90 days were assigned the following quality points: A = 2.25, B = 1.75, C = 1.25, D = 0.50, E = 0.00.

6. The method for calculating each student's grade point average was: Total number of quality points earned (QP) divided by the total of the credit value for each course (CV) equals grade point average (GPA).

The formula for figuring each subject's grade point average was thus QP $\div$ CV = GPA. See FIGURE D for an example of a typical student's academic courses and a sample calculation of his or her grade point average.

Procedures

The procedures utilized in this study were as follows:

1. Written permission to conduct the study using the designated research sample and the selected instruments was procured from the Superintendent of Schools of the school district in the Cleveland, Ohio metropolitan area where the study was conducted (APPENDIX B).

2. Written agreement to cooperate in the research project was procured from the principal (APPENDIX C).

3. The researcher reviewed The 3-R's Test Directions for Administration of the Ohio Version, Forms A and B, Levels 9 - 18 (Riverside Publishing Company, 1982) with the three high school counselors who administered "The 3-R's Verbal Abilities, Quantitative Abilities, and Achievement Tests: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982) prior to the administration of the tests during the Fall semester. The counselors had administered the tests on a prior occasion and a review of the directions was sufficient training for them to administer the tests.

4. The counselors administered "The 3-R's Verbal Abilities, Quantitative Abilities, and Achievement Tests: Ohio Version, Form A, Level 15/16" in a single day during the Fall semester to all sophomores in the high school. Subsequently, students' answer sheets were sent to the Riverside Publishing Company for computer scoring. Test results were returned to the writer by the Riverside Publishing Company.

5. Written agreement of the four teachers of the sophomore health

FIGURE D

ACADEMIC COURSES AND CALCULATION OF GRADE POINT AVERAGE (GPA) FOR A TYPICAL STUDENT

Courses	Grades	Quality Points (QP)	Credit Value (CV)
English	A	4.0	1.0
German	B	3.0	1.0
Honors Math	C	2.5	1.0
Social Studies	D	0.5	0.5
Science	E	0.0	1.0
		10.0	4.5

QP(10.0) ÷ CV(4.5) = GPA(2.22)

classes to cooperate in the research project was procured (APPENDIX D).

6. The health teachers were trained by the researcher regarding procedures to inform the students about the study, procure parent and student permission to participate, prepare for administering the questionnaire, and administer the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983) to consenting sophomores who received parent permission. Refer to the teacher's training manual for the research project in APPENDIX E.

7. Parent and student permission to participate in the research project and to take the "Rasmussen Ego Identity Scale: Revised Short Form" were obtained by the health teachers on a permission form prepared by the researcher (APPENDIX F). Parent permission was not needed to take "The 3-R's Tests: Ohio Version, Form A, Level 15/16" since these were a part of the school's regular abilities and achievement testing program.

8. Within the same week that "The 3-R's Tests: Ohio Version, Form A, Level 15/16" were given in the Fall semester by the counselors, the health teachers administered the "Rasmussen Ego Identity Scale: Revised Short Form."

9. Subjects were informed that the "Rasmussen Ego Identity Scale: Revised Short Form" was not a classroom evaluation, but merely a self-report questionnaire which should allow them to answer more openly and honestly.

10. The entire assessment process was accomplished under the coordination of the researcher. Total assessment time was approximately 210 to 220 minutes for all instruments.

11. The researcher scored the "Rasmussen Ego Identity Scale: Revised Short Form" and calculated each sophomore's grade point average upon

procuring his or her grades for the immediate past year from the principal.

12. The raw data from the five instruments used in the study were applied to the design which was correlational using a multiple regression configuration, the Pearson-product moment technique, and a t-test.

Data Collection, Analysis, and Interpretation

The data were collected by the researcher and recorded on a coding form. Items recorded were: (1) student code number, (2) age in months, (3) race, (4) socioeconomic status, (5) gender, (6) ego identity raw score, (7) cognitive verbal abilities raw score, (8) cognitive quantitative abilities raw score, (9) normed achievement test composite raw score, and (10) grade point average (carried out two places beyond the decimal point).

The following statistical procedures were used in this investigation to respond to the research questions and to test the null hypotheses (FIGURES B and C). The Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) was used to reduce, process, and calculate the data using the "canned" statistical treatment and applications. The 0.05 level of significance was used to test the previously stated hypotheses and in determining statistical significance of the findings.

The multiple regression technique (Witte, 1980) was utilized to test the significant levels of prediction in hypotheses H_1 through H_{12}. The Pearson correlation (Witte, 1980) was used as the test for statistically significant relationships in hypotheses H_{13} to H_{42}. A t-test (Witte, 1980) was employed to test significant differences in H_{43} to H_{47}. TABLES 1, 2, and 3 in Chapter IV were prepared as devices for summarizing, analyzing, and interpreting the data.

Summary of Methodology for the Study

The literature was unclear and inconclusive regarding the relationship of cognitive ability and academic achievement with ego identity (Cauble, 1976; Hummel & Roselli, 1983; Rowe & Marcia, 1980; Wagner, 1976; Shukert, 1980). This study was an attempt to investigate these variables in several domains among male, female, and all sophomore subjects.

The variables which were represented in the framework of the study (FIGURE A) were ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA). The design for the study (FIGURES B and C) was correlational using a multiple regression configuration, the Pearson correlation technique, and the t-test. The design included a research sample of all sophomores enrolled in a single, typical, suburban high school located in the Cleveland, Ohio metropolitan area who agreed to participate in the study with parent permission. The dependent or criterion variable was EI and the independent or predictor variables were CVA, CQA, NTA, and GPA.

The dependent variable of EI was measured with the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), a self-report questionnaire originally developed by Rasmussen (1964) as a longer scale and revised and shortened by Enright, Lapsley, Cullen, and Lallensack (1983). The independent variables of CVA, CQA, and NTA were measured by the component parts of "The 3-R's Achievement and Abilities Tests: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982). GPA was measured by calculating each student's

GPA for the immediate past year.

Three research questions were explored through the use of 47 null hypotheses. The research questions were: (1) What amount of variance is attributed to EI of male, female, and all subjects by way of CVA, CQA, NTA, and GPA? (2) Are there any significant relationships among EI, CVA, CQA, NTA, and GPA for male, female, and all subjects? and (3) Are there any significant differences between males and females with regard to EI, CVA, CQA, NTA, and GPA?

Procedures utilized in this study included: (1) procuring the permission of the Superintendent of Schools to conduct the study, (2) enlisting the cooperation of the principal, the counselors, and the health teachers in carrying out the study, (3) training the counselors and the health teachers, (4) obtaining parent and student permission to participate in the study, and (5) conducting assessment of all subjects who agreed to participate with parent permission within the same week during the Fall semester. Data were collected and recorded on a coding form. Data analysis and interpretation were accomplished by applying a multiple regression configuration, the Pearson correlation technique, and a t-test using The Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The 0.05 level of significance was used to test the null hypotheses and in determining statistical significance of the findings.

CHAPTER IV

FINDINGS

Overview of Statistical Procedures

The intent of this study was to ascertain whether influence patterns, relationships, and gender differences could be found with respect to ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) of 202 high school sophomore subjects enrolled in a typical suburban high school located in the Cleveland, Ohio metropolitan area. Data were collected for EI by utilizing the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983). Data for CVA, CQA, and NTA were procured by administering "The 3-R's Abilities and Achievement Tests: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982). Data for GPA were obtained by acquiring a copy of each subject's grades from the principal of the school and calculating the GPA.

The three research questions which generated 47 null hypotheses were described in Chapter III. The Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) was used to process the data. The findings reported in Chapter IV followed the order of the research questions and their null hypotheses. Those hypotheses (H_1 through H_{12}) which pertain to influence patterns among male, female, and all subjects were analyzed using the multiple regression technique. Next, data were analyzed using Pearson-product moment correlations for the null hypotheses concerning variable relationships among male, female, and all subjects (H_{13} through H_{42}). A t-test was then used to determine gender differences for the variables of EI, CVA, CQA, NTA, and GPA (H_{43} through H_{47}). Chapter IV ends with a summary of the findings.

Findings Pertaining to Influence Patterns

The first research question (RQ_I) asked what amount of variance is attributed to ego identity (EI) of male, female, and all subjects by way of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA). This question produced twelve null hypotheses. They were tested for significance by using a multiple regression analysis as shown in TABLE 1. Findings for male (H_1 through H_4), female (H_5 through H_8), and all subjects (H_9 through H_{12}) are discussed separately below.

Males

A multiple regression analysis (TABLE 1) was used to test null hypotheses H_1 through H_4 for relationships between the criterion variable of ego identity (EI) and the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for males. An analysis of the data revealed that a relationship existed between the criterion variable and the predictor variables. The magnitude of the relationship as represented by the multiple regression factor ($R^2 = 0.07$) was very low with only 7% of the variance in EI accounted for by the four predictor variables when combined. An examination of the R^2's reflects that the majority or 4% of the variance was ascribed to CVA. The only significant finding attained was for CVA ($R^2 = 0.04$, $p < 0.05$). Thus null hypothesis H_1 was rejected. This result was similar to that of Tzuriel and Klein

TABLE 1

REGRESSION ANALYSIS FOR THE RELATIONSHIP BETWEEN THE PREDICTOR VARIABLES OF COGNITIVE VERBAL ABILITY, COGNITIVE QUANTITATIVE ABILITY, NORMED TEST ACHIEVEMENT, GRADE POINT AVERAGE AND THE CRITERION VARIABLE OF EGO IDENTITY FOR MALE, FEMALE, AND ALL SUBJECTS

Predictor Variables and Ego Identity	df	F	R^2	p
Males				
Cognitive Verbal Ability	97	3.65	0.04	0.05*
Cognitive Verbal Ability and Cognitive Quantitative Ability	96	2.28	0.05	0.10
Cognitive Verbal Ability, Cognitive Quantitative Ability, and Normed Test Achievement	95	2.05	0.06	0.11
Cognitive Verbal Ability, Cognitive Quantitative Ability, Normed Test Achievement, and Grade Point Average	94	1.90	0.07	0.11
Females				
Cognitive Verbal Ability	101	2.51	0.02	0.11
Cognitive Verbal Ability and Cognitive Quantitative Ability	100	1.74	0.03	0.18
Cognitive Verbal Ability, Cognitive Quantitative Ability, and Normed Test Achievement	99	1.35	0.04	0.26
Cognitive Verbal Ability, Cognitive Quantitative Ability, Normed Test Achievement, and Grade Point Average	98	1.87	0.07	0.12
All Subjects				
Cognitive Verbal Ability	200	6.85	0.03	0.01**
Cognitive Verbal Ability and Cognitive Quantitative Ability	199	3.41	0.03	0.03*
Cognitive Verbal Ability, Cognitive Quantitative Ability, and Normed Test Achievement	198	2.26	0.03	0.08
Cognitive Verbal Ability, Cognitive Quantitative Ability, Normed Test Achievement, and Grade Point Average	197	2.96	0.06	0.02*

**$p < 0.01$

*$p < 0.05$

(1977). In terms of this finding one might infer that CVA demonstrates only a faint tendency toward predicting EI for males. Where no significant variance was accounted for in EI with regards to CVA and CQA combined, CVA, CQA, and NTA mingled (H_3), and all variables consolidated (H_4), hypotheses H_2 through H_4 were accepted. These findings were in harmony with those of Afrifah (1980).

Females

Null hypotheses H_5 through H_8 pertaining to females were tested for significant variances between the criterion variable of ego identity (EI) and the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) through a linear multiple regression process. The multiple regression analysis (TABLE 1) revealed that a relationship existed between the criterion variable and the predictor variables for females. The strength of the relationship ($R^2 = 0.07$) can be inferred as unsubstantial. Only 7% of the common or shared variance in the criterion of EI was accounted for by the four predictor variables. This finding was similar to that established for males in the study. It could be presumed then that little or no variance is attributed to EI by the predictor variables for males or females when considered separately. Based on the findings, there was no significant variance attributed to the EI of females with respect to CVA, CQA, NTA, and GPA. Null hypotheses H_5 through H_8 were accepted. The results of this investigation substantiate an earlier study by Shukert (1980).

All Subjects

Tested for significant variances between the criterion variable of ego identity (EI) and the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) were null hypotheses H_9 through H_{12} using a multiple regression technique for all subjects in this study. The linear regression analysis (TABLE 1) revealed that a relationship existed between the criterion variable of EI and the predictor variables. The multiple regression coefficient of determination (R^2) among these variables for all subjects was 0.06, the strength of which is considered quite weak. Only 6% of the variance ($p < 0.02$) in the criterion variable of EI was accounted for by the four predictor variables.

An inspection of the R^2's indicated that 3% of the variance ($p < 0.01$) was derived from CVA, while the remainder was contributed by GPA (3%). A cautious inference would be that CVA and GPA are the strongest of the four predictor variables for attainment of EI for all subjects. The resolution of EI issues for all subjects, both in the classrooms and in daily life, requires some degree of cognitive ability and academic achievement. Since no significant amount of variance was attributed to EI in terms of CVA, CQA, and NTA when combined, H_{11} was accepted. Significant variance, however, was attributed to CVA ($p < 0.01$), CVA and CQA merged ($p < 0.03$), and all predictor variables combined ($p < 0.02$). These significant positive relationships also partially verify the previous findings of Raphael (1978). Based on these findings, null hypotheses H_9, H_{10}, and H_{12} were rejected. There was significant, though not very meaningful, variance attributed to EI in terms of CVA, CVA and CQA united, and the four predictor variables incorporated for all students in this study. When all subjects were considered, the large number (202) perhaps contributed to the statistical significance even if the relationships found were of minimal substance.

Findings Concerning Variable Relationships

The second research question (RQ_{II}) inquired about the relationships among the variables of ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for male, female, and all subjects. This question generated 30 null hypotheses. Pearson-product moment correlations were used to test null hypotheses H_{13} through H_{42} as shown in TABLE 2. Findings for male (H_{13} through H_{22}), female (H_{23} through H_{32}), and all subjects (H_{33} through H_{42}) are presented in the sub-sections which follow.

Males

Pearson-product moment correlations (TABLE 2) were used to test null hypotheses H_{13} through H_{22} for relationships between ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for males. The highest positive correlation shown for males is between NTA and CQA (0.86), which is significant at the 0.001 level. NTA and CVA were also highly significantly correlated at the 0.001 level at 0.82. Other correlations which were significant at the 0.001 level were: CQA and CVA (0.72), GPA and CQA (0.46), GPA and NTA (0.46), and GPA and CVA (0.38). It may be seen from these results that a modest to strong relationship prevails between cognitive ability and academic achievement factors among males. These findings were in agreement with the results of previously cited research by Cross and Allen (1970). Furthermore, a significant positive correlation, though modest in strength, was found

TABLE 2

INTERCORRELATIONS AMONG THE VARIABLES OF EGO IDENTITY, COGNITIVE VERBAL ABILITY, COGNITIVE QUANTITATIVE ABILITY, NORMED TEST ACHIEVEMENT, AND GRADE POINT AVERAGE FOR MALE, FEMALE, AND ALL SUBJECTS

Variables	Ego Identity	Cognitive Verbal Ability	Cognitive Quantitative Ability	Normed Test Achievement	Grade Point Average
			Males		
Ego Identity	1.00				
Cognitive Verbal Ability	0.19	1.00			
Cognitive Quantitative Ability	0.20*	0.72***	1.00		
Normed Test Achievement	0.14	0.82***	0.86***	1.00	
Grade Point Average	0.19	0.38***	0.46***	0.46***	1.00
			Females		
Ego Identity	1.00				
Cognitive Verbal Ability	0.16	1.00			
Cognitive Quantitative Ability	0.03	0.66***	1.00		
Normed Test Achievement	0.13	0.84***	0.78***	1.00	
Grade Point Average	0.22*	0.51***	0.49***	0.57***	1.00
			All Subjects		
Ego Identity	1.00				
Cognitive Verbal Ability	0.18**	1.00			
Cognitive Quantitative Ability	0.12	0.69***	1.00		
Normed Test Achievement	0.15*	0.83***	0.82***	1.00	
Grade Point Average	0.21**	0.44***	0.46***	0.51***	1.00

***$p < 0.001$

**$p < 0.01$

*$p < 0.05$

between EI and CQA (0.20, $p < 0.05$). The data suggest that the EI of males is somewhat related to one form of cognitive ability, that is, quantitative ability.

Based upon the findings of this study, null hypotheses H_{13}, H_{15}, and H_{16} were accepted. There were no significant correlations between EI and CVA (H_{13}), EI and NTA (H_{15}), and EI and GPA (H_{16}). Hypotheses H_{14} and H_{17} through H_{22} were rejected. There were significant correlations between EI and CQA (H_{14}), CVA and CQA (H_{17}), CVA and NTA (H_{18}), CVA and GPA (H_{19}), CQA and NTA (H_{20}), CQA and GPA (H_{21}), and NTA and GPA (H_{22}).

Females

Null hypotheses H_{23} through H_{32} concerning females were tested for significant relationships among the variables of ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) using Pearson-product moment correlations (TABLE 2). The highest positive correlation for females was found between NTA and CVA (0.84, $p < 0.001$). Other significant correlations were revealed between the following: NTA and CQA (0.78, $p < 0.001$), CQA and CVA (0.66, $p < 0.001$), GPA and NTA (0.57, $p < 0.001$), GPA and CVA (0.51, $p < 0.001$), and GPA and CQA (0.49, $p < 0.001$). These findings were comparable to those for males. GPA and EI were also found to be somewhat correlated (0.22, $p < 0.05$). These results were similar to those found by Hummel and Roselli (1983) in an earlier cited study.

Based upon these findings, null hypotheses H_{26} through H_{32} were rejected. There were significant correlations between EI and GPA (H_{26}), CVA and CQA (H_{27}), CVA and NTA (H_{28}), CVA and GPA (H_{29}), CQA and NTA (H_{30}), CQA and GPA (H_{31}), and NTA and GPA (H_{32}). There were no significant correlations between EI and CVA (H_{23}), EI and CQA (H_{24}), and EI and NTA (H_{25}). Based upon these findings, null hypotheses H_{23} through H_{25} were accepted.

All Subjects

The ten null hypotheses (H_{33} through H_{42}) generated for interrelationships among ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) for all subjects were tested through the use of Pearson-product moment correlations (TABLE 2). The intercorrelations revealed that the greatest significant correlations were associated with NTA and CVA (0.83, $p < 0.001$), NTA and CQA (0.82, $p < 0.001$), CQA and CVA (0.69, $p < 0.001$), GPA and NTA (0.51, $p < 0.001$), GPA and CQA (0.46, $p < 0.001$), and GPA and CVA (0.44, $p < 0.001$). These results were similar to those for males and females when studied separately. Also having a significant positive correlation of mild strength and partially supporting the multiple regression findings for all subjects in this study were EI and GPA (0.21, $p < 0.01$), EI and CVA (0.18, $p < 0.01$), and EI and NTA (0.15, $p < 0.05$). Even though statistical significance was obtained, the actual relationships between EI and GPA, CVA, and NTA are of minimal substance. Based upon these correlational findings, which are in concordance with the data of Rowe and Marcia (1980), null hypotheses H_{33} and H_{35} through H_{42} were rejected. Only H_{34} was accepted. There was no significant relationship between EI and CQA for all subjects.

Findings Pertinent to Gender Differences

The third research question (RQ_{III}) asked if there were any significant differences among ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) between males and females. This question generated five null hypotheses (H_{43} through H_{47}). The means and standard deviations of the five variables for both sexes were tested for significance through the use of a series of two-tailed t-tests as shown in TABLE 3. The t-values for four of the variables were not significant. These were for EI, CVA, CQA, and GPA. One of the variables, NTA, was significant.

Ego Identity

The means for ego identity (EI) showed that males with 50.10 (SD = 4.12) and females with 50.87 (SD = 4.13) were quite similar in terms of attainment of EI. The t-test with a t-value of 1.33 revealed that the sexes are not significantly different, therefore, null hypothesis H_{43} was accepted.

Cognitive Verbal Ability

The means and standard deviations for cognitive verbal ability (CVA) revealed no significant differences in regard to males and females. The female group had the higher mean with 31.97 (SD = 7.01) than the male group whose mean was lower at 30.29 (SD = 8.49). Since the t-test with a t-value of 1.53 revealed that there are no significant differences in regard to CVA between the two groups, null hypothesis H_{44} was accepted.

Cognitive Quantitative Ability

The means and standard deviations for the variable of cognitive quantitative ability (CQA) revealed 32.26 (SD = 6.74) for females and 31.76 (SD = 8.09) for males. As shown in the t-test (t = 0.48) these

TABLE 3

DIFFERENCES BETWEEN MALES AND FEMALES FOR EGO IDENTITY, COGNITIVE VERBAL ABILITY, COGNITIVE QUANTITATIVE ABILITY, NORMED TEST ACHIEVEMENT, AND GRADE POINT AVERAGE

Subjects / Variables	Males			Females			Differences	
	N	M	SD	N	M	SD	t-value	P
Ego Identity	99	30.10	4.12	103	50.87	4.13	1.33	NS
Cognitive Verbal Ability	99	30.29	8.49	103	31.97	7.01	1.53	NS
Cognitive Quantitative Ability	99	31.76	8.09	103	32.26	6.74	0.48	NS
Normed Test Achievement	99	28.42	6.28	103	30.53	5.04	2.64	0.01**
Grade Point Average	99	2.05	0.82	103	2.22	0.86	1.51	NS

**$p < 0.01$

were not significantly different and null hypothesis H_{45} was accepted.

Normed Test Achievement

The higher mean for normed test achievement (NTA) was in the female group with 30.53 (SD = 5.04) and the lower was in the male group with 28.42 (SD = 6.28). The t-value derived from the t-test for the variable of NTA ($t = 2.64$, $p < 0.01$) resulted in the rejection of the null hypothesis. There was a significant difference in terms of NTA between males and females. Females tended to score somewhat higher than males on the normed achievement test in this study.

Grade Point Average

The females in the study maintained the higher grade point average (GPA) with a mean of 2.22 (SD = 0.86), while the males earned the lower GPA with a mean of 2.05 (SD = 0.82). The t-value of 1.51 from TABLE 3 was not significant; therefore, null hypothesis H_{47} was accepted. There was no significant difference in terms of GPA between males and females in the study.

Summary of Findings

The findings for an answer to the first research question (RQ_I) established that cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) were unsubstantially accountable in predicting ego identity (EI) for male, female, and all subjects enrolled in a typical suburban high school. Multiple regression analyses demonstrated that CVA, CQA, NTA, and GPA when combined showed little or no tendency toward predicting EI: 7% for males, 7% for females, and 6% for all subjects. CVA accounted for 4% of the variance among males, while GPA contributed 3% among females.

CVA and GPA each accounted for 3% among all subjects. The significant levels attained were for CVA for males ($R^2 = 0.04$, $p < 0.05$), CVA for all subjects ($R^2 = 0.03$, $p < 0.01$), CVA and CQA merged for all subjects ($R^2 = 0.03$, $p < 0.03$), and all predictor variables combined for all subjects ($R^2 = 0.06$, $p < 0.02$). Even though statistical significance was obtained, the proportion of variance attributed to EI by these variables is minimal.

The results for the second research question (RQ_{II}) produced 18 Pearson-product moment correlations which were significant at the 0.001 level: CQA and CVA (males 0.72, females 0.66, and all subjects 0.69); NTA and CVA (males 0.82, females 0.84, and all subjects 0.83); NTA and CQA (males 0.86, females 0.78, and all subjects 0.82); GPA and CVA (males 0.38, females 0.51, and all subjects 0.44); GPA and CQA (males 0.46, females 0.49, and all subjects 0.46); and GPA and NTA (males 0.46, females 0.57, and all subjects 0.51). Two correlations were significant for all subjects at the 0.01 level, EI and CVA ($r = 0.18$) and EI and GPA ($r = 0.21$). Also, three correlations were significant at the 0.05 level: EI and CQA (males 0.20); EI and GPA (females 0.22); and EI and NTA (all subjects 0.15). The tendency of CQA for males, GPA for females, and CVA, NTA, and GPA for all subjects to be positively related to EI is thus only modestly supported by the latter five correlation coefficients.

The findings associated with the third research question (RQ_{III}) indicated that there were no significant differences between males and females for EI, CVA, CQA, and GPA. The only variable for which males and females differed significantly was NTA ($t = 2.64$, $p < 0.01$). Females tended to score somewhat higher than males on NTA in this study.

CHAPTER V

DISCUSSION OF FINDINGS

Introduction

This Chapter provides a brief overview of the problem, procedures, and findings of the study and presents some other findings not related to the hypotheses. Additionally, conclusions were developed based upon findings related to the research questions, hypotheses, limitations, and assumptions of the study. In regards to the conclusions of this study, recommendations were also made.

Overview of the Study

This study was conducted for a three-fold purpose: (1) to measure the amount of variance which the independent variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) contributed to the ego identity (EI) of males, females, and all subjects; (2) to examine the relationships among the variables of EI, CVA, CQA, NTA, and GPA for male, female, and all subjects; and (3) to determine gender differences with regard to EI, CVA, CQA, NTA, and GPA. The sample for the study was an intact group of 202 high school sophomore students enrolled in a typical suburban high school in the Cleveland, Ohio metropolitan area. The literature and research findings in Chapter II showed that there were mixed and uncertain results regarding relationships among the variables indicated.

The variables were measured through the use of the following instruments: (1) "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), (2) "The 3-R's Verbal Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (3) "The 3-R's Quantitative Abilities Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), (4) "The 3-R's Achievement Test: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), and (5) grade point average (GPA) of each student from the immediate past year. The data obtained were analyzed by using the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The analysis of multiple regression, Pearson-product moment correlations, and a series of t-tests was used to test the three research questions and 47 null hypotheses.

The significant findings shown in TABLES 1, 2, and 3 demonstrate the extent with which the study focus variables of EI, CVA, CQA, NTA, and GPA contributed to this study. In light of these findings, the indication is that EI for male, female, and all subjects has little or no dependence upon these study focus variables.

Other Findings

Other findings of interest in the study not related to the hypotheses have been classified into two categories: (1) race and (2) socioeconomic status (SES). The means and standard deviations for ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) based on the race and SES of the subjects were calculated and are presented in TABLE 4. Aspects of race and SES are

TABLE 4

MEANS AND STANDARD DEVIATIONS FOR EGO IDENTITY, COGNITIVE VERBAL ABILITY, COGNITIVE QUANTITATIVE ABILITY, NORMED TEST ACHIEVEMENT, AND GRADE POINT AVERAGE BASED ON RACE AND SOCIOECONOMIC STATUS (SES)

RACE	Variables														
	Ego Identity			Cognitive Verbal Ability			Cognitive Quantitative Ability			Normed Test Achievement			Grade Point Average		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Black	19	52.58	2.48	19	27.26	7.79	19	25.37	7.64	19	24.37	7.32	19	1.97	0.56
White	178	50.30	4.24	178	31.67	7.55	178	32.79	6.97	178	30.07	5.32	178	2.16	0.87
Other	5	49.60	3.65	5	27.40	12.62	5	29.80	10.66	5	28.80	5.93	5	1.76	0.73

SES	Variables														
	Ego Identity			Cognitive Verbal Ability			Cognitive Quantitative Ability			Normed Test Achievement			Grade Point Average		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Free Lunch	27	50.48	3.58	27	28.81	9.70	27	28.04	8.74	27	26.44	7.78	27	1.94	0.60
No Free Lunch	175	50.49	4.22	175	31.51	7.43	175	32.63	7.03	175	29.97	5.26	175	2.16	0.87

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discussed below.

Race

For purposes of this study race was divided into three categories: (1) black, (2) white, and (3) other. Subjects indicated their race on a questionnaire (APPENDIX A) while completing the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983). As shown in TABLE 4, of the 202 participants, 19 or 10% were black, 178 or 88% were white, and 5 or 2% were categorized as other. An analysis of the means indicated that blacks attained a higher mean (52.58, SD = 2.48) than whites (50.30, SD = 4.24) or others (49.60, SD = 3.65) for EI; however, whites achieved the highest means for CVA, CQA, NTA, and GPA as indicated in TABLE 4. Since race was not considered as a focus variable in this study, one is left to speculate about the relatedness of racial and cultural background to EI, CVA, CQA, NTA, and GPA. A future definitive study is needed to explore these relationships using a larger number of blacks and others in the sample.

Socioeconomic Status

To determine the socioeconomic status (SES) of each subject in this study, this researcher utilized the free lunch count data provided by the Treasurer of the school district in which the study was conducted. Subjects who received a free lunch based on Federal government guidelines were considered to be in the low SES. Those who received no free lunch were assumed to be in the middle to upper SES. Of the 202 subjects who participated in the study, 27 or 13% were in the low SES, while 175 or 87% came from the middle to upper SES. As illustrated in TABLE 4, the means of the middle to upper SES subgroup was higher than the low

SES subgroup for ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA). This descriptive information leads the researcher to conjecture about the relationship of SES to EI, CVA, CQA, NTA, and GPA. What is the relationship of SES to these variables? Though SES was not considered as a focus variable in this study, research in this area should be considered in the future.

Conclusions

The purpose of this study was to investigate the degree to which cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) would predict the level of attainment of ego identity (EI) among male, female, and all high school sophomores enrolled in a suburban high school. An examination was also made to determine any significant correlations among the variables of EI, CVA, CQA, NTA, and GPA for male, female, and all subjects. Another purpose was also to delineate gender differences. Conclusions reached herein are related to these purposes. Discussed below are conclusions in terms of variances, relationships, and gender differences.

Variances

When the linear multiple regression technique was used with males and females separately, the data indicated (TABLE 1) that the independent variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) were of little or no use ($R^2 = 0.07$) for both sexes in predicting ego identity (EI). Moreover, only one variable was entered into the regression equations at a significant level. CVA, with an R^2 value of 0.04, was significant at the 0.05 level for males. The strength of this relationship was weak. These findings are similar to those of Cauble (1975). It is concluded that there is little or no variance accounted for in EI by the four independent or predictor variables in males or females when studied separately.

The multiple linear regression analysis revealed that the independent variables used in this study attributed 6% of the variance in EI when all subjects were considered. CVA and GPA each contributed 3% of the variance, which were the greatest amounts when compared to the other independent variables for all subjects. CVA was significant at the 0.01 level, while CVA and CQA merged and all variables combined were significant at the 0.05 level. It is, therefore, expected to a very slight degree that the higher the level of CVA, CQA, NTA, and GPA, the higher the level of EI of all subjects in this study tends to be. These findings partially agree with those of Raphael (1978). Although it is not at all appropriate to assume the determination of a predictive or causal factor, it does, however, appear sensible to suggest that EI and CVA, CQA, NTA, and GPA minimally tend to reinforce each other. A positive change in CVA, CQA, NTA, and GPA has the slight potential to facilitate a positive change in EI, however, the weaker assumption that positive changes in EI have the potential to enhance CVA, CQA, NTA, and GPA is beyond the scope of this investigation and is open for further study.

Relationships

An examination was made to determine if any significant correlations existed among ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA). The Pearson-product moment correlations for both males and females were significant between NTA and CQA, NTA and CVA, CQA and CVA, GPA and CQA, GPA and NTA, and GPA and CVA. The findings are in agreement with those of Cross and Allen (1970). It may be concluded that a meaningful relationship exists among cognitive ability and academic achievement factors when males and females are considered separately. EI and CQA were significantly correlated (0.20, $p < 0.05$) for males but the strength of the relationship was weak. A significant positive correlation (0.22, $p < 0.05$) was identified between EI and GPA for females. This finding is congruous with the earlier finding of Hummel and Roselli (1983). Since the strength of the relationship between EI and GPA for females is slight, it may only be concluded with caution that these two variables are related among females.

Nine Pearson-product moment correlations were significant when all subjects were studied together. The data in TABLE 2 demonstrated significant correlations between NTA and CVA, NTA and CQA, CQA and CVA, GPA and NTA, GPA and CQA, and GPA and CVA. These findings are partially in harmony with those of Chang (1982). It may be concluded from the findings that a healthy relationship exists among cognitive ability and academic achievement factors for all subjects. When further analyzing these data, significant positive relationships of modest strength were found between EI and GPA (0.21, $p < 0.01$), EI and CVA (0.18, $p < 0.01$), and EI and NTA (0.15, $p < 0.05$); these findings are consistent with those of Crook (1982). It may be concluded with caution that EI and GPA, CVA, and NTA show a tendency to be mildly related.

Gender Differences

An ancillary purpose of this study was to attempt to ascertain gender differences with regard to ego identity (EI), cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA). Based on the results of the t-tests performed in this study which are partially similar to those of Archer (1980), it can be concluded that there are no significant differences between males and females for EI, CVA, CQA, and GPA. It would appear that both sexes tend to develop on a parallel course in terms of these variables. The t-test for NTA, however, did yield one significant difference (2.64, $p < 0.01$). It may be concluded that there was a slight tendency for females in this study to score higher on NTA than males.

Recommendations

As a result of the literature cited in Chapter II and in view of the implied theoretical base, the findings, and the conclusions of this study, a number of recommendations were developed by this researcher. The recommendations appear below and are presented in the following categories: counseling, curriculum, future research and study, inservice, instruments, sample, and teaching practices.

Counseling

It is urged that the results of this study be shared with guidance and counseling personnel for the purpose of aiding in the counseling of students. Pressure on adolescents to seek an early resolution of identity crises may be misplaced if the result is less than a thorough consideration of alternatives that might be personally expressive. Counselors working with young adolescents might best proceed by responding directly to questions and concerns coming from the adolescents themselves, rather than trying to speed development toward cognitive or academic growth. There is much to recommend concerning the internal time-table of developing persons.

This study indicated that students function at various levels of ego identity, cognitive, and academic development. Since individuals differ so much in their development, there is no one best way to counsel all of them. What may be a good approach for one student may not necessarily be best for another. Counselors should, when interacting with adolescents, be cognizant of individual differences, and adapt their interventions and techniques to fit the level of development of each individual.

Curriculum

The recommendation is that thought and emphasis be given to the selection of content and materials which reflect the ego identity concerns of youths. The curriculum should become more closely related to the adolescent's search for self-understanding by relating more identity relevant topics to the cognitive and academic aspects of the curriculum.

Future Research and Study

Relationships between cognitive ability, academic achievement, and ego identity will continue to be important areas of investigation as schools receive much more attention in the years ahead. Hopefully, new information will be added to the existing knowledge concerning these relationships as more research is completed. Continued and refined investigation about these relationships is recommended to lay the foundation for more valid counseling, curriculum, and instructional planning.

The outcomes from the regression analysis demonstrated that aspects of cognitive ability and academic achievement were of little or no instrumental value in predicting ego identity. The variance measured by way of all predictor variables was only 6% for all subjects. These findings must still remain restrictive and open for corollary refined study. Additional investigation appears necessary to ascertain trends from the results. The implications generated from this study are not conclusive enough, and therefore, caution should be exercised in terms of their generalization.

Inservice

Inservice seminars are proposed for teachers, counselors, and administrators to develop an awareness of the importance of the variables used in this study. The seminars could focus on the importance of developing teaching and counseling strategies to help students improve their cognitive ability, academic achievement, and ego identity.

Instruments

Despite the limitations mentioned in Chapter I of this study, the instruments used appear to provide a means to quickly assess each student's state of cognitive, academic, and ego identity development, the results of which can be used to help counselors to formulate appropriate counseling interventions and teachers to develop suitable instructional strategies. These instruments can provide an easy, yet meaningful, index of the current level of functioning of many adolescents. Students having difficulty with school and life situations can be identified and helped.

Future extensions of the present study should include refinement of the measuring instrument for ego identity. Failure to establish ego identity as a strong criterion variable in this study would dictate such refinement.

Sample

Since the sample used in this study was from a single suburb in the Cleveland, Ohio metropolitan area, it is recommended that the study be replicated in other geographic areas in order to include a sample of rural and urban subjects to determine if there are differences. Furthermore, it is recommended that the sample be drawn from a population to include an equal mix of subjects from various socioeconomic, racial, and cultural backgrounds so that these variables can be explored as well. Because this study was limited to high school sophomores only, it is suggested that further studies be conducted using subjects from other grade levels. This would enable comparisons and generalizations to be made with regard to age and the long term effects of the statistical findings of this study.

Teaching Strategies

This study did not investigate instructional methods, but recommendations can be extended to that area based on the results of this study. The study has shown ego identity to be positively related with aspects of cognitive ability and academic achievement. However, only 6% of the variance was accounted for by these variables for all subjects. Teachers need to look elsewhere for developing a student's ego identity. What can a teacher do to help improve a student's ego identity? The following ideas are suggested as areas to explore:

1. A teacher should attempt to create a classroom environment that is warm and accepting. A confrontation with reality, however, in such

an environment is important for an accurate view of one's self. Communication in such an environment must be open and involve more than just teacher directed learning and grade reporting.

2. Through the use of a mixture of open-ended experiences, students can be allowed to explore and devote their attention to instruction that captures their imagination. As they are actively involved in a democratic environment and making their own decisions in the classroom, their learning could become meaningful because a part of themselves is involved in the outcome of the learning experience.

3. Teachers can create classroom environments where cognitive ability is enhanced, academic achievement increased, and ego identity developed. It is recommended that classroom activities focus on affective as well as cognitive and academic development directly linked to ego identity. Moreover, from a realistic point of view, the effort spent improving ego identity tendencies may not have a great deal of carry-over in improving cognitive ability and/or academic achievement. On the other hand, class time spent on improving cognitive factors and achievement may not strengthen ego identity. Teachers might design classroom activities for all students with various learning abilities so that they can gain sufficient satisfaction from and enjoy learning.

Present teaching styles include lecturing, rehearsing, reviewing, drills, quizzes, tests, and assignments which means that even when these activities are meaningful, they are teacher directed and the learning activities are controlled by the authority of the teacher. Teachers should introduce more meaningful activities into the classroom which would allow for greater student involvement in the resolution of daily concerns.

Summary of Chapter V

This study represented an exploratory attempt to: (1) examine the degree of influence the predictor variables of cognitive verbal ability (CVA), cognitive quantitative ability (CQA), normed test achievement (NTA), and grade point average (GPA) would have on the criterion variable of ego identity for male, female, and all subjects; (2) probe into the relationships among these variables for male, female, and all subjects, and (3) search for gender differences among the variables. The sample consisted of 202 high school sophomores from one high school in the Greater Cleveland, Ohio area. Variables were measured by the "Rasmussen Ego Identity Scale: Revised Short Form" (Enright, Lapsley, Cullen, & Lallensack, 1983), "The 3-R's Abilities and Achievement Tests: Ohio Version, Form A, Level 15/16" (Cole, Trent, Wadell, Thorndike, & Hagen, 1982), and the GPA of each student for the immediate past year. Data were scrutinized by using the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The three research questions and 47 null hypotheses were tested by using a multiple regression technique, Pearson-product moment correlations, and a series of t-tests. Other findings having to do with race and socioeconomic status, but not related to the hypotheses, were presented with the indication that further study is needed using these variables.

Conclusions reached when applying the linear multiple regression technique were that among males and females the independent variables were of little or no use ($R^2 = 0.07$) for both sexes in predicting EI. Only CVA ($R^2 = 0.04$, $p < 0.05$) was significant for males. Among all subjects the independent variables contributed 6% of the variance in

EI, the strength of which was weak. CVA was significant at the 0.01 level; CVA and CQA merged and all predictor variables combined were significant at the 0.05 level. It is, therefore, expected to a very slight degree that the higher the level of CVA, CQA, NTA, and GPA, the higher the level of EI of all subjects in this study.

The Pearson-product moment correlations for male, female, and all subjects were significant between NTA and CQA, NTA and CVA, CQA and CVA, GPA and CQA, GPA and NTA, and GPA and CVA at the 0.001 level. The conclusion is that a meaningful and healthy relationship exists among the cognitive ability and academic achievement factors for males, females, and all subjects. EI was positively correlated with CVA (0.20, $p < 0.05$) for males, GPA (0.22, $p < 0.05$) for females, and NTA (0.15, $p < 0.05$), CVA (0.18, $p < 0.01$), and GPA (0.21, $p < 0.01$) for all subjects. Since the strength of these relationships is weak, it was concluded with caution that EI and CVA (males), GPA (females), and NTA, CVA, and GPA (all subjects) demonstrate a tendency to be mildly related.

A series of t-tests revealed no significant gender differences with regard to EI, CVA, CQA, and GPA, however, a t-test did indicate one significant difference for NTA (2.64, $p < 0.01$). Based on these findings it is concluded that there are no significant gender differences for EI, CVA, CQA, and GPA. There is a significant difference in that females tended to score higher on NTA than males.

Recommendations based on a review of the literature, the findings, and the conclusions of this study were that: (1) the results of this study should be shared with guidance and counseling personnel for the purpose of aiding in the counseling of students; (2) greater thought should be given to the selection of content and materials which reflect the developmental concerns of youth; (3) future research and study should be conducted to refine investigations about the variables studied, and to explore racial, cultural, and socioeconomic aspects; (4) inservice seminars should be conducted to develop an awareness of the variables used in this study and to focus on developing new counseling and teaching techniques; (5) use should be made of the instruments applied in this study to help counselors to formulate appropriate counseling interventions and teachers to develop suitable instructional strategies; (6) the sample should be replicated in other geographic areas using rural, urban, and suburban subjects with an equal racial and socioeconomic mix; and (7) meaningful instruction should be introduced into the classroom which would allow for greater student involvement.

APPENDICES

APPENDIX A

Rasmussen Ego Identity Scale
(Revised Short Form)

QUESTIONNAIRE FOR HIGH SCHOOL SOPHOMORES

Dear Sophomore Student:

Thank you for agreeing to participate in this research project. Also, please extend my thanks to your parents for permitting you to take part in the study.

You will be assigned a number by your principal after you have completed this questionnaire so that any information collected from you will not be personally identifiable and will be kept strictly confidential. Indicate the initials of your first, middle, and last name below and complete the other information requested as follows:

1. Student Initials ________
2. Today's Date ________
3. Your Birthdate ________
4. Circle your sex (Male - Female)
5. Circle your race (Black - White - Other)

Please complete the attached questionnaire according to the following instructions. You should be finished in about 20 to 30 minutes, however, there is no set time to be done. Take the time you need to respond, but plan to finish within one class period.

1. Respond to each statement as it personally pertains to you by circling agree or disagree for each of the 32 items.

2. Remember, circle only one response for each item.

3. Please respond to each item. Do not leave any item without circling one response.

4. You are encouraged to respond to each statement as truthfully as you can. Your honest, personal response is being sought rather than the most popular one.

5. Use a pencil with an eraser so that you can adjust a response if you change your mind as you go along or when you have finished the questionnaire.

This is not a classroom test, but merely a self-report questionnaire.

There are no right or wrong answers. You are being asked your opinion. You will not be personally evaluated in any way or receive a grade of any kind as a result of responding to the statements in the questionnaire. The results will be used strictly for research purposes.

Thanks again for participating in this research project. Your help and cooperation are really appreciated. NOW TURN THE PAGE AND BEGIN TO RESPOND TO EACH ITEM BY CIRCLING AGREE OR DISAGREE.

Sincerely,

THOMAS W. WRABEL, Graduate Student
International Graduate School

Questionnaire Items

Circle Agree or Disagree for each of the 32 items

1. No one seems to understand me. Agree Disagree
2. I have a fear of being asked questions in class because of what other people will think if I don't know the answer. Agree Disagree
3. Working is nothing more than a necessary evil that a person must put up with to eat. Agree Disagree
4. It doesn't pay to worry much about decisions you have already made. Agree Disagree
5. When I have to work, I usually get pretty bored no matter what the job is. Agree Disagree
6. I have never told a lie nor do I expect to. Agree Disagree
7. It's better not to let other people know too much about your family or background if you can help it. Agree Disagree
8. I really don't have any definite goals or plans for the future. Agree Disagree
9. I never enjoy taking part in school clubs or student government activities. Agree Disagree
10. In general, people can be trusted. Agree Disagree
11. I would get along better in life if I were better looking. Agree Disagree
12. At my age, a person must make his or her own decisions, even though his or her parents might not agree with the things he or she does. Agree Disagree
13. It's not hard to keep your mind on one thing if you really have to. Agree Disagree
14. Even when I do a good job in my work, other people don't seem to realize it or give me credit. Agree Disagree
15. The best part of my life is still ahead of me. Agree Disagree

16. I am proud of my family background. Agree Disagree

17. I answer questions people ask me as truthfully as I can. Agree Disagree

18. During the past few years I have taken little or no part in clubs, organized group activity, or sports. Agree Disagree

19. I have found that people I work with frequently do not appreciate or seem to understand my abilities. Agree Disagree

20. I can't stand to wait for things I really want. Agree Disagree

21. Even though I try, it is usually pretty hard for me to keep my mind on a task or job. Agree Disagree

22. A person who hasn't been a member of a well organized group or club at some time in his teens has missed a lot. Agree Disagree

23. When I think about my future, I feel I have missed my best chances for making good. Agree Disagree

24. I like to tackle a tough job as it gives me a lot of satisfaction to finish it. Agree Disagree

25. I am always busy but it seems that I am usually spinning my wheels and never seem to get anywhere. Agree Disagree

26. It doesn't bother me when my friends find out I can't do certain things as well as other people. Agree Disagree

27. As a rule, I don't regret the decisions I make. Agree Disagree

28. I feel pretty sure that I know what I want to do in the future and I have some definite goals. Agree Disagree

29. A person can't be happy in a job where he is always competing against others. Agree Disagree

30. I feel that I have missed my opportunity to really be a success in life. Agree Disagree

31. It is better to say nothing in public than to take a chance on other people hearing you make a mistake. Agree Disagree

32. I lose interest in things if I have to wait too long to get them. Agree Disagree

Stop. Go back to make certain that you have completed all the information requested on the first page and have circled one response (agree or disagree) for each item.

When you have completed the questionnaire, turn it face down. Your teacher will collect it from you before the class period ends.

Once again, thank you for responding to this questionnaire and participating in this research study.

Directions for Scoring the Rasmussen Ego Identity Scale: Revised Short Form

The following are directions for scoring the "Rasmussen Ego Identity Scale: Revised Short Form":

1. Use the score of "2" for the ego identity responses indicative of the attainment of ego identity in the part-conflicts which appear on the next page.

2. Use the score of "1" for the opposite response which is considered as a non-ego identity response.

3. Uncircled responses are scored as "1" or non-ego identity responses.

4. Determine the raw score for each student by adding the scores for each response on the scale.

5. Be careful to determine the proper score for each item because sometimes an "agree" answer represents an ego identity response and sometimes a "disagree" is scored for ego identity.

6. Items 6 and 17 which are "exaggerated distractor" items are not scored at all.

7. After an individual's total raw score has been determined, record that score on the first page of the questionnaire to the right of the student's initials in parentheses.

The higher the individual's score on the scale, the greater the level of ego identity is suggested to be. Conversely, the lower the individual's score on the scale, the lesser the level of ego identity is suggested to be.

Responses Indicative of Attainment of Ego Identity

Item	Response	Part-Conflict	Item	Response	Part-Conflict
1	Disagree	Identity	17	--	--
2	Disagree	Autonomy	18	Disagree	Initiative
3	Agree	Industry	19	Disagree	Identity
4	Agree	Autonomy	20	Disagree	Trust
5	Disagree	Industry	21	Disagree	Industry
6	--	--	22	Agree	Iniative
7	Disagree	Initiative	23	Disagree	Trust
8	Disagree	Identity	24	Agree	Industry
9	Disagree	Initiative	25	Disagree	Initiative
10	Agree	Trust	26	Agree	Autonomy
11	Disagree	Identity	27	Agree	Autonomy
12	Agree	Autonomy	28	Agree	Identity
13	Agree	Industry	29	Disagree	Industry
14	Disagree	Identity	30	Disagree	Trust
15	Agree	Trust	31	Disagree	Autonomy
16	Agree	Initiative	32	Disagree	Trust

APPENDIX B

Superintendent's Permission

SCHOOL SYSTEM LETTER HEAD

Date

Subject: Superintendent's Permission
to Conduct Research Project

Superintendent's Name, Title
Name of School District
Street Address
City, State, and Zip Code

Dear (name of Superintendent):

I am writing as a follow-up to our recent phone conversation and face-to-face interview about the above-captioned subject. Your permission is being requested to invite all sophomores at (name of school) to participate in a research project which I am conducting to attempt to determine the relationship of ego identity to cognitive ability and academic achievement among high school sophomores. It is felt that the results will be helpful in: (1) predicting how ability and achievement influence identity, (2) altering counseling and teaching styles, (3) bringing about curriculum changes, and (4) redesigning high school programs for sophomores. I would be happy to provide you with a copy of the results of the study when it is completed.

Student involvement would include completing "The 3-R's Abilities and Achievement Tests: Ohio Version, Form A, Level 15/16" as part of the regular abilities and achievement testing program and taking the "Rasmussen Ego Identity Scale: Revised Short Form" ("REIS"), a copy of which is attached for your information. Also, I would calculate each student's grade point average (GPA) for the immediate past year after collecting his or her grades from the principal.

Each sophomore student will complete "The 3-R's Tests" early in the Fall semester as part of the school's abilities and achievement testing program and will be asked to complete the "REIS" at approximately the same time in health class which should take 20 to 30 minutes to do and which should cause very little to no disruption in his or her studies. The students will not be taking any risks by completing the "REIS." The following precautions will be taken:

1. Each sophomore will be assigned a number by the principal so that he or she will not be personally identifiable in the study.
2. The "REIS" is not a classroom test, but merely a questionnaire.
3. Student responses on the "REIS" and "The 3-R's Tests" will be kept strictly confidential.

4. No student will be personally evaluated in any way on the "REIS" or receive a grade of any kind as a result of responding to the statements.
5. The results will be used strictly for research purposes.

Individual parent and student permission will be requested before a student would participate in the project. See the sample parent and student permission form. Only students who agree to participate with parent permission will be used in the study. By participating, students will be helping to contribute to the growing body of research dealing with the early teen years and will be gaining a valuable learning experience.

Your permission is requested to collect the data and carry out the research project with the sophomore class at (name of school) as described above this Fall. Please indicate your permission below and return at your convenience. Thank you for your consideration.

Sincerely yours,

THOMAS W. WRABEL, Graduate Student
International Graduate School

Check one:

Permission Granted __________

Permission Denied __________

Superintendent's Signature _________________________ Date __________

APPENDIX C

Principal's Agreement to Cooperate

SCHOOL SYSTEM LETTER HEAD

Date

Subject: Principal's Agreement to
Cooperate in Research Project

Principal's Name, Title
Name of School
Street Address
City, State, and Zip Code

Dear (name of principal):

I am writing as a follow-up to our recent phone conversation and face-to-face interview about the above-captioned subject. As you are aware, (name of Superintendent), the Superintendent of Schools, has granted his permission for me to conduct a research project at (name of school). See the attached approval. What is as important to me as his permission to conduct the study is your cooperation in helping me to carry it out. Your cooperation is being sought to invite all sophomores at (name of the school) to participate in a research project which I am conducting to attempt to determine the relationship of "ego identity" to cognitive ability and academic achievement among high school sophomores. It is felt that the results will be helpful in: (1) predicting how ability and achievement influence identity, (2) altering counseling and teaching styles, (3) bringing about curriculum changes, and (4) redesigning high school programs for sophomores. I would be happy to provide you with a copy of the results of the study when it is completed.

Student involvement would include completing "The 3-R's Abilities and Achievement Tests: Ohio Version, Form A, Level 15/16" as part of the regular abilities and achievement testing program and taking the "Rasmussen Ego Identity Scale: Revised Short Form" ("REIS"), a copy of which is attached for your information. Also, I would calculate each student's grade point average (GPA) for the immediate past year after collecting his or her grades from you.

Each sophomore student will complete "The 3-R's Tests" early in the Fall semester as part of the school's abilities and achievement testing program and will be asked to complete the "REIS" at approximately the same time in health class which should take 20 to 30 minutes to do and which should cause very little to no disruption in his or her studies. I would need your cooperation in enlisting the help of the health teachers in orienting the students, passing out and collecting parent permission slips, and administering the "REIS" to the students. I will train them how to give it, and I will score it after the students have completed it.

The students will not be taking any risks by completing the "REIS." The following precautions will be taken:

1. Each sophomore will be assigned a number by you so that he or she will not be personally identifiable in the study.
2. The "REIS" is not a classroom test, but merely a questionnaire.
3. Student responses on the "REIS" and "The 3-R's Tests" will be kept strictly confidential.
4. No student will be personally evaluated in any way on the "REIS" or receive a grade of any kind as a result of responding to the statements on it.
5. The results will be used strictly for research purposes.

Individual parent and student permission will be requested before a student would participate in the project. See the sample parent and student permission form attached. Only students who agree to participate with parent permission will be used in the study. By participating, students will be helping to contribute to the growing body of research dealing with the early teen years and will be gaining a valuable learning experience.

Your cooperation is requested to collect the data, solicit health teacher cooperation, and carry out the research project with the sophomore class at (name of the school) as described above this Fall. Please indicate your agreement to cooperate below and return at your convenience. Thank you for your consideration.

Sincerely yours,

THOMAS W. WRABEL, Graduate Student
International Graduate School

Check one:

Agree to Cooperate ________

Not Able to Cooperate ________ Reason ____________________

Principal's Signature ____________________________ Date ________

APPENDIX D

Health Teacher's Agreement to Cooperate

SCHOOL SYSTEM LETTER HEAD

Date

Subject: Health Teacher's Agreement to
Cooperate in Research Project

Teacher's Name, Title
Name of School District
Street Address
City, State, and Zip Code

Dear (name of teacher):

I am writing as a follow-up to our recent meeting about the above-captioned topic. (Name of Superintendent), the Superintendent, has granted his permission for me to conduct a research project at (name of school), and (name of principal), the Principal, has indicated his willingness to cooperate in helping me to carry it out. What is as important to me as the Superintendent's permission and the Principals's agreement to cooperate is your willingness in helping me to carry out the research project.

The purpose of the project is to attempt to determine the relationship of "ego identity" to cognitive ability and academic achievement. The best way I can explain "ego identity" is that teenagers are said to be trying to find themselves. Those who do feel good about themselves; those who don't feel bad. This is an aspect of mental health and it's why I chose the health classes as a place to try to conduct part of the study. It is felt that the results will be helpful in: (1) predicting how ability and achievement affect identity, (2) altering counseling and teaching styles, (3) bringing about curriculum changes, and (4) redesigning high school programs for sophomores. I have agreed to provide (name of the principal) with a copy of the results of the study, and you would be welcome to review them.

Your cooperation is being sought in helping me to invite all of your sophomore health class students to participate in the study during the Fall semester, procuring parent and student permission to participate, and administering the "Rasmussen Ego Identity Scale: Revised Short Form" (a short self-report questionnaire which takes 20 to 30 minutes to give) on the same day as all other health classes. I will provide you with parent and student permission forms (you would give them out, collect them, and give them to me), explain to you how to orient the sophomore health classes about the research project, orient you to the "Rasmussen Ego Identity Scale: Revised Short Form," and train you to administer it to the consenting students. I will score it. Approximately two hours of your time may be involved here and about a half hour of the students' time. A copy of the sample parent and student permission form and the "Rasmussen Ego Identity Scale: Revised Short Form" are attached for your information. Please keep confidential.

I'm making a personal appeal to you for your help as described above. I'd sure appreciate your involvement. Please indicate your agreement to cooperate below and return to me as soon as possible. Thanks for your consideration.

Sincerely yours,

THOMAS W. WRABEL, Graduate Student
International Graduate School

Check one:

Agree to Cooperate ________

Not Able to Cooperate ________ Reason ____________________

Health Teacher's Signature ____________________ Date ________

APPENDIX E

Teacher's Manual for the Research Project

Objectives

After studying this manual and receiving oral instructions from the researcher, each health teacher will be able to:

1. Orient all of his or her sophomore health class students to the research project.

2. Invite all of his or her sophomore health class students to participate in the project as subjects.

3. Explain, distribute, and collect the parent and student permission form.

4. Properly prepare for administering the "Rasmussen Ego Identity Scale: Revised Short Form" ("REIS").

5. Administer the "REIS" to his or her sophomore health class students.

Instructions

The instructions in this manual will be presented in the following five modules: (1) student orientation, (2) invitation to participate, (3) parent and student permission, (4) preparations for administering the questionnaire, and (5) administering the instrument. Each of the modules will be covered separately in the sections which appear below.

Student Orientation

The plan is that the "REIS" be administered during the same week that "The 3-R's Abilities and Achievement Tests" are administered to all sophomores. Two weeks prior to the administration of the scale all health class teachers should introduce the idea of the research project to all sophomore students. Discuss the following points with them:

1. This researcher is conducting a study to help determine sophomore students' attitudes about present day teenage issues and commitments.

2. Student participation in the study would be to complete a short questionnaire in health class which should take 20 to 30 minutes to do.

3. There would be little to no disruption in their studies.

4. The Superintendent of Schools and the Principal have given their permission for the study to be conducted in the school.

5. The results for the study should be helpful in: (a) predicting how ability and achievement affect the way students feel about themselves, (b) altering counseling and teaching styles, (c) bringing about curriculum changes, and (d) redesigning high school programs for sophomores.

Invitation to Participate

On the same day that students are oriented to the study, invite them to participate in it. Explain the following:

1. Students will not be taking any risks by completing the questionnaire.

2. Each sophomore will be assigned a number by the principal so that he or she will not be personally identified.

3. This will not be a classroom test, but merely a questionnaire.

4. Student responses on the questionnaire will be kept strictly confidential.

5. No student will be personally evaluated in any way or receive a grade of any kind as a result of responding to the statements in the questionnaire.

6. The student can ask questions pertaining to the study or

withdraw from it at any time without penalty.

7. The results will be used strictly for research.

8. Encourage all students to participate because they will be contributing to the growing body of research dealing with the early teen years and will be gaining a valuable learning experience.

Parent and Student Permission

On the same day that students are oriented and invited to participate in the project, distribute a copy of the letter regarding parent and student permission to participate in the research project to each student. Indicate the following:

1. The letter is a written invitation to all sophomore students to participate in the study.

2. Ask students to sign the letter to participate in the study on a voluntary basis.

3. Tell the students to take the letters home, discuss the contents with their parents, ask their parents to give them written permission to participate, and return the signed copy of the letter to the health teacher within three days.

4. Only students who agree to participate with parent permission will be used in the study.

5. The participation of all sophomores should be strongly encouraged to make the study as comprehensive and representative of the sophomore class as possible.

6. Collect the signed parent and student permission letters within three days and follow-up with students who may be late in returning them.

7. Keep a list of all students who return the signed letter.

8. Once all signed permission letters have been received, forward

them to the researcher.

9. Thank the students for returning the signed permission letters.

Preparations for Administering the Questionnaire

Prior to administering the questionnaire, do the following:

1. Read the directions for completing the scale on the first and second pages.

2. Complete the scale to familiarize yourself with it.

3. Have the following items available when testing starts:

    a. Blank questionnaires in proper quantities.

    b. Personal copy of the questionnaire.

    c. Pencils (have students bring one with them).

4. Decide on a seating arrangement that will be comfortable for the students.

5. Be sure the room is properly ventilated.

Administering the Questionnaire

The "REIS" should be administered to all sophomore students who agree to participate in the research project with parent permission during the same week that "The 3-R's Abilities and Achievement Tests" are administered. All classes should take the "REIS" on the same day. When administering the questionnaire adhere to the instructions which appear below.

1. Once all students are seated, pass out the questionnaire.

2. Read the first two paragraphs on Page 1 of the questionnaire to the the students.

3. Instruct them to complete in writing the information requested on Page 1 of the questionnaire, that is, (a) student initials for their

first, middle, and last name, (b) today's date, (c) their birthdate, (d) circle their sex, and (e) circle their race. Demonstrate on the chalkboard.

4. Read the rest of the paragraphs on Pages 1 and 2 to the students. Make sure the students understand the instructions.

5. Be certain that students understand how to mark each item. Demonstrate on the chalkboard.

6. Show students how to fold back their booklets so that only the page on which they are working is visible.

7. Walk around during the administration of the questionnaire to help students and to see that answers are being marked correctly.

8. Give help on general questions only.

9. Remind students to go back after they have finished to make certain they have completed all information requested on the first page and have circled only one reponse (agree or disagree) for each item.

10. Tell students that when they have completed the questionnaire to turn it face down and that you will collect it from them before the class period ends.

11. Have all students begin to take the questionnaire at the same time.

12. After all students are finished, collect the completed questionnaire, and thank them for paticipating in the research study.

APPENDIX F

Parent and Student Permission

SCHOOL SYSTEM LETTER HEAD

Date

Subject: Parent and Student Permission
to Participate in Research
Project

Dear Parent and Student:

I am inviting all sophomores at (name of the school) to participate in a research project which I am conducting to help determine sophomore students' attitudes toward teenage issues and commitments. It is felt that the results will be helpful in (1) predicting how ability and achievement affect the way students feel about themselves, (2) altering counseling and teaching styles, (3) bringing about curriculum changes, and (4) redesigning high school programs for sophomores.

Each sophomore student will be asked to complete a short questionnaire in health class which should take 20 to 30 minutes to do and which should cause very little to no disruption in his or her studies. The student will not be taking any risks by completing the questionnaire. The following precautions will be taken:

1. Each sophomore will be assigned a number by the principal so that he or she will not be personally identified in the study.
2. This will not be a classroom test but merely a questionnaire.
3. Student responses on the questionnaire will be kept strictly confidential.
4. No student will be personally evaluated in any way or receive a grade of any kind as a result of responding to the statements on the questionnaire.
5. The student can ask questions pertaining to the study or withdraw from it at any time without penalty.
6. The results will be used strictly for research.

The Superintendent of Schools and the Principal have given their permission for this research study to be conducted with the sophomore class, however, what is now requested is individual parent and student permission. Only students who agree to participate with parent permission will be used in the study. By participating, students will be helping to contribute to the growing body of research dealing with the early teen years and will be gaining a valuable learning experience.

Parent and student permission is requested for the student to participate in the research project and to complete the questionnaire described above. Please indicate your permission below and return it to the health class teacher as soon as possible.

Thank you for your cooperation.

Sincerely yours,

THOMAS W. WRABEL, Graduate Student
International Graduate School

Check one:

Permission Granted __________

Permission Denied __________

Parent Signature ___________________________________ Date ___________

Sophomore Student Signature ________________________ Date ___________

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VITA

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Educational Background:

1985 Ed.D.	International Graduate School St. Louis, Missouri	Counseling
1984 Ed.S.	Kent State University Kent, Ohio	Educational Administration
1960 M.Ed.	Kent State University Kent, Ohio	Guidance and Counseling
1956 B.A.	St. Francis College Loretto, Pennsylvania	Social Studies and English

Occupational Experience:

1968 - present	Director of Pupil Personnel Services Garfield Heights City School District Garfield Heights, Ohio
1962 - 1967	Guidance Counselor Garfield Heights Junior High School Garfield Heights, Ohio
1958 - 1961	Social Studies and English Teacher William Foster Elementary School Garfield Heights, Ohio
1956 - 1957	U.S. Army Signal Corps Ft. Gordon, Georgia

Memberships:

1962 - 1985	Ohio School Counselors Association
1962 - 1985	American School Counselors Association
1962 - 1985	American Association for Counseling and Development
1968 - 1985	Ohio Association of Pupil Personnel Administrators
1968 - 1985	National Association of Pupil Personnel Administrators

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Robert W Pitcher, Ph D
Mentor

Harold Harty, Ph.D.
Committee Member

Stephen L. Nichols, Ph.D.
Dean of Educational Program